EXHIBIT C

The District Court
of Tel Aviv-Yafo

Civil File 38433-01-19
Before the honorable Justice O. Maor

In the matter of: **Cortica Ltd.**
By counsel Advocates Dr. Gilad Wekselman or Uriel Mozes or Eddie Levdansky *et al*
Herzog, Fox, Neeman & Co., Advocates
Asia House, 4 Weizmann Street, Tel Aviv - Yafo 6423904
Tel: 03-6927424; Fax 03-6966464

The Counter Plaintiff

- Versus -

1. eNitiatives IP Ltd.
By counsel Advocates Jeremy Benjamin or Danny Dilbary or Tom Gal *et al*
Goldfarb Seligman & Co., Advocates
98 Yigal Alon Street, Ampa Tower, Tel Aviv - Yafo 4789141
Tel.: 03-6089803; Fax: 03-61031111.

The Counter Defendant 1

2. M&B IP Analysts Limited Liability Company
A company incorporated under the laws of the State of New Jersey, USA
Entity ID: 0400634843
500 Headquarters Plaza, West Tower 7th floor
Morristown NJ 07960-7070, United States of America
Tel: +19082743111; Fax: +19082743113

The Counter Defendant 2

Nature of the claim: Contractual, tortious, pecuniary, unjust enrichment
Amount of the claim: ILS 20,000,000, for filing fee purposes.

Statement of Counterclaim

Pursuant to Regulations 52 and 53(a) of the Civil Procedure Regulations, 5744-1984 (hereinafter: the "**Regulations**"), the Counter Plaintiff, Cortica Ltd. (hereinafter: "**Cortica**"), the defendant in Civil File 38433-01-19, hereby files a counterclaim to the honorable Court against eNitiatives IP Ltd. (hereinafter: "**eNitiatives**"), the plaintiff in Civil File 38433-01-19.

In the framework of the Statement of Counterclaim, Cortica also brings action against the Counter Defendant 2, M&B IP Analysts Limited Liability Company (hereinafter: "**M&B**"), this pursuant to Regulation 54 of the Regulations. eNitiatives and M&B shall jointly be referred to as the "**Defendants**".

On the basis of that set forth below, the honorable Court is requested to dismiss the claim filed by eNitiatives, to accept the Counterclaim, and to charge the Defendants to jointly and severally pay Cortica an amount of ILS 20,000,000. Additionally, the honorable Court is requested to charge the Defendants with Cortica's costs, including attorney fees.

All emphases in the document have been added by the undersigned unless explicitly stated otherwise.

A. Introduction

1. This Claim revolves around most severe acts performed by the Defendants against Cortica, while breaching duties of fidelity, care, fairness and loyalty imposed on them. Over the duration of a decade (from 2008 until March 2018) the Counter Defendant 1, eNitiatives, purported to provide Cortica with patent registration services for more than 170 patent applications and ancillary services, while being assisted (since 2014) by the Counter Defendant 2, M&B.[1]

2. In consideration for these services, Cortica paid the Defendants a total amount of **approximately USD 2,000,000 (!)**, in addition to options issued to eNitiatives to acquire Cortica shares. These are exorbitant amounts relative to the scope of services provided to Cortica and relative to customary amounts, most certainly when it has emerged *post factum* that the services that were rendered did not justify this scope of payment, or any amount close to such.

3. The longstanding relationship between the parties was based on the trust that Cortica placed in the Defendants - notwithstanding the fact that Cortica's primary asset (a start-up company in the area of artificial intelligence) was its intellectual property, Cortica did not know how to protect this asset, and it relied on the Defendants. Cortica engaged eNitiatives for this purpose - which was supposed to advise Cortica on its intellectual property strategy, including recommending the number of patent applications to file and their form, based on the technological development of Cortica's products, with M&B acting as eNitiatives "arm" to file patent applications in the US. As described hereunder, **the Defendants were blatantly negligent and flagrantly breached such trust by acting for their own good at the expense of the nature and quality of the services provided to Cortica**.

4. During 2017, the Defendants sent Cortica inflated invoices for staggering amounts totaling tens of thousands of dollars per month (there was even one month of more than USD 100,000 !), this in deviation from the undertaking made with respect to the annual budget required to protect Cortica's intellectual property. Concurrently, Cortica felt that the Defendants were not involving it in the registration processes and in material decisions related thereto, which gave rise to doubts and suspicion at Cortica with respect to those inflated invoices, as well as with respect to the nature of the applications and responses filed and the need for them.

[1] Prior to 2014, the year in which M&B commenced providing services relating to Cortica's intellectual property, eNitiatives was assisted by the law firm Myers Wollin LLC (hereinafter "**MW**"). It should be noted that any reference made to M&B should also be deemed referring to MW, insofar as the reference relates to services provided to Cortica until the date on which M&B replaced MW in providing services to Cortica, in 2014.

5. In view of these doubts and suspicions, Cortica asked to clarify the meaning of these exorbitant charges and the manner that its intellectual property was being handled. Accordingly, Cortica engaged an external advisor in the patent sector who examined whether the filed patent applications and the patents obtained in such respect were necessary, as well as the nature and quality of such applications and patents.

6. **This examination uncovered most serious findings.** In reality, it emerged that throughout the duration of the entire period and particularly in recent years, the Defendants **exploited Cortica, literally**, unlawfully enriched themselves at Cortica's expense, systematically deceived it, and caused it great damage through negligent and blatantly unprofessional conduct in the framework of the services.

7. As shall be described below, eNitiatives worked with a fee structure model based on "milestones". This model created a conflict of interest between Cortica's interests to receive protection that is as broad and long-term as possible for the technology it developed, and eNitiatives' financial interest to charge fees as high as possible. M&B also had an interest in filing as many patent applications as possible in order to charge fees for such. It became clear to Cortica that the Defendants had succumbed to temptation, and acted in complete contrast to Cortica's interest as a client, in order to inflate the fees they could charge Cortica. For example:

   7.1. The Defendants adopted a "copy-and-paste" method in drafting most of Cortica's patent applications and even **negligently filed approximately 70% of Cortica's US patent applications (114 patent applications) as CIP (Continuation-in-Part) applications** and thereby severely harmed the scope and duration of protection granted for the patents. **As a result thereof, a significant number of the patents are entitled to less than 10 years of protection, notwithstanding that some of them could have enjoyed a period of protection of approximately 20 years;**

   This bizarre practice is irregular and derived solely from such built-in conflict of interest - in this manner the Defendants were able to avoid much work in preparing independent patent applications. Furthermore, the Defendants knew that by filing CIP applications they increase the likelihood that the applications would be examined relatively quickly. In this manner, the Defendants ensured that they would quickly and easily achieve the milestones, and charge as high fees as possible in consideration for as little work as possible;

   7.2. The Defendants filed dozens of patent applications, while artificially splitting them into separate applications, in order to increase their revenues through increasing the number of applications and thereby achieve more milestones, all the while that it was possible to submit them in a consolidated manner and reduce Cortica's costs.

8. The Defendants, who were meant to protect, advise, maintain, file and handle Cortica's intellectual property, acted **negligently** *vis-a-vis* Cortica's patent applications and everything entailed therein:

   8.1. Especially in the last few years, the Defendants did not consult, did not present the full picture, did not explain, and, by and large, did not involve Cortica in the registration processes and in major

decisions regarding its portfolio of patents, while breaching ethical duties, fiduciary duties, and professional duties. All this was done on a plethora of issues, such as responding to USPTO office actions, filing patent applications, extension applications, abandoning and reducing patent claims, **in one extreme case they even abandoned a patent application**, and in another case they failed to convert a provisional patent application to a regular patent application - such that the provisional patent application expired without a regular patent application being filed that would benefit from the priority date granted to the provisional application, while causing significant harm to Cortica. All the aforementioned - without receiving Cortica's approval;

8.2. The Defendants failed to warn of any problems, did not propose plans of action and did not properly handle all patent applications, and did not perform what was required of them with respect to the manner of formulating patent applications;

8.3. The Defendants **failed to implement significant changes necessitated by new case-law handed down by the US Supreme Court** as well as various rulings and decisions of the USPTO **regarding software patents**, which caused many office actions for various patent applications, some of which were difficult and even impossible to overcome (in light of the amateur and negligent drafting of the patent applications). This negligence forced Cortica to deal with the office actions (fees for responding to these office actions were charged in full). Additionally, at least some of Cortica's patents became unenforceable and/or exposed to cancellation proceedings and/or indirect challenge through infringement claims. This is aside from the fact that the Defendants exposed Cortica's new ideas which were meant to be defensible, had they been properly drafted in the filed patent applications;

8.4. the Defendants **drafted some of the patent applications** in a manner that was negligent and grossly unprofessional **whereby it is impossible to understand what technology is protected by the patents** - which also exposes these patents to cancellation proceedings and indirect challenges;

8.5. eNitiatives presented itself, *inter alia*, as an expert in developing protection strategies, appraising and commercializing inventions, however, in reality eNitiatives and M&B failed tremendously in developing such strategy. Even the appraisals that were made emerged as being inflated due to the negligent conduct, as set forth above and in great detail hereunder, including with respect to the incorrect development of the patent portfolio, in such a manner that made its commercialization challenging.

9. It should be noted that the negligent omissions and acts described above, **caused Cortica severe damage estimated at tens of millions of shekels, at least.**

10. Furthermore, as Cortica only learned ***post factum***, the Defendants **breached the fiduciary duties** owed to Cortica when **(1) they intentionally concealed from Cortica**, over many years, the fact that more than 70% of its patent portfolio is comprised of CIP applications, as well as the meaning of filing patent applications in this manner (a shorter defensible period for the patents). eNitiatives also tried to continue

to conceal this when it was explicitly asked about such; **(2)** eNitiatives **intentionally misled Cortica**, when executing the most current and recent agreement between the parties (2016), in such a manner which supposedly grants it additional rights beyond those granted to it under previous agreements, notwithstanding the parties' consent whereby the 2016 agreement would reflect the previous agreements. On the basis of clauses achieved through real deception, eNitiatives is now claiming significant amounts of money from Cortica, in the framework of the principal claim.

11. Another issue of no less importance, in which the Defendants also breached their fiduciary duties owed to Cortica, is that **in a significant part of the time during the course of the parties' relationship, no eNitiatives person was authorized to provide legal advisement and services**, and even M&B's manager, Mr. Michael Ben-Shimon (hereinafter: "**Mr. Ben-Shimon**"), who worked opposite Cortica over the years (first as an employee of MW and then as manager of M&B) - only qualified as a patent agent in 2012. Notwithstanding the aforementioned, the Defendants misled Cortica when they purported to provide it with legal advisement and services. It should be noted that such severe act explains, to a certain extent, the severe degree of negligence and unprofessional conduct related to the provided services.

12. Furthermore, eNitiatives' fee model and the manner that it was formulated was meant to blur the fact that no eNitiatives' person was qualified, as aforementioned, as well as the fact that **Cortica would be "double" charged for the same exact work** - once by eNitiatives and a second time by M&B. For example, in various instances a particular patent application was only drafted by eNitiatives or only by M&B; however, Cortica was charged as if M&B and eNitiatives drafted the application "from scratch".

13. It emerged that, **over the years, Cortica was charged inflated, double, and unnecessary fees amounting to hundreds of thousands of dollars for the services promised to it**. Rather than saving costs as presented and promised to it, Cortica paid increased and double fees rather than making one payment to one party. It should be emphasized that a significant share of the Defendants' actions, constitute a series of severe breaches of the ethical duties which apply to attorneys and patent agents.

14. Once Cortica understood that it had been deceived over many years by professionals whom it had trusted, and who were supposed to protect its most important asset - Cortica's intellectual property, it announced the termination of its engagement with eNitiatives (and as a corollary to such also with M&B which operated through eNitiatives as aforementioned), and refused to pay them any payments whatsoever for the "professional" service provided to it.

15. **Since the services provided to Cortica were of poor , negligent and amateur quality, while clearly preferring the Defendants' interests over those of Cortica, Cortica is bringing action against the Defendants to repay all amounts paid to them over the years, in their different capacities - approximately USD 2 million. Furthermore, Cortica is bringing action against the Defendants to compensate it for the damages caused by the Defendants to its intellectual property which Cortica estimates (conservatively) at approximately USD 19 million.**

B. The parties relevant to the dispute

B.1 Cortica

16. Cortica is one of the leading and most advanced companies in the world in the field of artificial intelligence. Cortica was established in 2007 as a startup, and since has developed unique platforms that are able to "learn" reality and autonomously create insights and operations for computerized systems. Currently, Cortica's primary operations are focused on the smart-city and autonomous vehicle sector.

    Cortica's extract from the Registrar of Companies is attached hereto as **Annex "1"**. Background about Cortica taken from Wikipedia and a number of news articles describing its operations are attached hereto as **Annex "2"**.

B.2 eNitiatives

17. eNitiatives is a company which purports to provide services in the intellectual property sector, including developing protection strategies and portfolio development, drafting patent applications, appraising and commercializing inventions.

18. A number of persons relevant to this Claim act within eNitiatives: Mr. Reuven Marko, eNitiatives founder and CEO and its controlling shareholder (hereinafter: "**Mr. Marko**"). Mr. Marko is neither an attorney nor a patent agent; Mr. Ophir Marko, Mr. Marko's son, who qualified as a patent agent in Israel in 2013; Mr. Or Agassi, serves as an attorney and director of eNitiatives and who, to Cortica's best knowledge, only started working at eNitiatives in 2011 (hereinafter: "**Adv. Agassi**") in the framework of Heskia - Hacmun Law Firm (hereinafter: "**HH**"), within which eNitiatives operated at such time as a kind of patent department.

    eNitiatives' extract from the Registrar of Companies is attached hereto as **Annex "3"**.

B.3 M&B

19. To Cortica's best knowledge, M&B is a company which operates in the patent registration field. M&B was established in 2014 by Mr. Ben-Shimon, who to Cortica's best knowledge was previously employed by the US law firm MW, and in the years prior to his employment at MW he was employed by eNitiatives.

20. Cortica met Mr. Ben-Shimon through Mr. Marko, when, to Cortica's best knowledge, he was employed by MW. eNitiatives provided Cortica with patent registration services in the US commencing from 2008 through MW when Mr. Ben-Shimon would personally handle Cortica's patents. Mr. Ben-Shimon qualified as a patent agent in the US in 2012, and established M&B in 2014. M&B replaced MW at such time and eNitiatives started using it to provide Cortica with the services.

    The search results for M&B from the website of the registrar of companies for the State of New Jersey is attached hereto as **Annex "4"**.

A printout from the USPTO website which demonstrates that Mr. Ben-Shimon only qualified as a patent agent in 2012 is attached hereto as **Annex "5"**.

C. The agreements between the parties

C.1 Cortica and eNitiatives

C.1 (I) 2008-2011 - the first agreement

21. The relationship between the parties commenced in 2008 when Cortica and eNitiatives entered an agreement regulating the intellectual property services (including patent registration and intellectual property protection strategy) that eNitiatives should provide Cortica (hereinafter: the "**2008 Agreement**").

    The 2008 Agreement (and its amendment) is attached hereto as **Annex "6"**.

22. The engagement was made after eNitiatives presented itself as having the knowledge, expertise and authority to handle Cortica's intellectual property, which was then a newly established start-up (2007), while eNitiatives represented that it would save Cortica significant patent registration costs through its operating method (drafting the applications by itself and being assisted by a US firm).

23. eNitiatives is the party that drafted the 2008 Agreement, as well as the other agreements (which we shall relate to further on), in a "sophisticated" manner, as follows:

24. **Vague description of the services.** In order to conceal the fact that we were solely dealing with legal services which no person at eNitiatives was authorized to provide (interviews with inventors, drafting patent applications, drafting responses to office actions etc.) - in the agreements between the parties the services rendered were referred to by vague and bizarre names such as "IP Catalyst Services (IPCS)", "Protection Strategy", IP Scan and IP Audit processes and reports", and other completely made-up terms were also used, such as "PPD - pseudo patent document" (a euphemism for a draft patent application). It should be emphasized in this context that, at such time, Cortica did not know that eNitiatives and Mr. Ben-Shimon who at such time was not qualified as a patent agent, lacked the professional qualification to provide the services offered by eNitiatives.

25. **Vague description of the fee components and milestones.** As shall be demonstrated in Chapter G hereunder, in reality, for each and every patent application, Cortica was charged a **double payment without any justification for the same exact work (drafting a patent application)**. eNitiatives was well aware of this and therefore made sure to also conceal the components of its fees, as follows:

    Charging based on milestones - rather than working under the customary model of hourly charges or charges based on work actually performed, eNitiatives chose to charge Cortica based on the "stage" of the relevant application, regardless of the amount of time and effort actually invested in a particular job. This fee model, while using non-customary terminology, was meant: **(1)** to differentiate (clearly artificially) between the services provided by eNitiatives and the services provided by M&B, in order to

conceal the fact that such were the same exact services and to enable a double charge, and **(2)** as aforementioned, to conceal the fact that they were unqualified.

For example, in the 2008 Agreement, the cash component of the fees (which was vaguely referred to as "Cash Compensation" in order to conceal the fact that such were "Professional Fees") appears as follows:

> **"I. Cash Compensation**
> **At each one of the following milestones eNitiatives shall be entitled to the compensation listed below (the "Milestone Fee"):**
> **Submission of PPD** [pseudo patent document - the undersigned] **to patent attorney/agent or provisional (MS 1.0) - $2,000**
> **Filing of the patent with a patent office (MS 2.0) - $2,000**
> **Allowance if a patent by the respective patent office (MS 3.0) - $3,000"**

26. The outcome of this process was that Cortica in actual fact paid twice for each patent application, both to eNitiatives and also to M&B. As shall be described below, Cortica was forced to pay inflated, exaggerated and unnecessary amounts, due to this fee mechanism which is not dependent on the nature or quality of the patent applications, or the amount of working time actually invested in every patent application, rather only on the volume of applications and the "stage" of each application.

C.1 (II) 2011-2016 - the second agreement - eNitiatives "joins" HH law firm and operates from within it

27. eNitiatives understood well that it was forbidden under law to provide legal services without being appropriately qualified as attorneys or patent agents. Therefore, in 2011, it joined the HH law firm, and made sure Cortica execute an agreement built off the 2008 Agreement, only this time with a law firm being added as a party, and while eNitiatives rationalizing this by the fact that it had expanded the scope of its operations (hereinafter: the "**2011 Agreement**").

The 2011 Agreement is attached hereto as **Annex "7"**.

28. The 2011 Agreement is similar to the 2008 Agreement, however, in order to understand eNitiatives' conduct, the special condition in Attachment I to the 2011 Agreement should be noted. Under this clause, in the event a need for special consulting with eNitiatives shall arise on a matter regarding an increase in the value of the patents, eNitiatives (which was not a party to the 2011 Agreement) shall be allocated, as consideration, options in Cortica, in accordance with the milestones.

29. It should be emphasized, that in reality the options were allocated to eNitiatives in accordance with each milestone **for each patent application filed during the term of the 2011 Agreement**, exactly like before and after such, without any connection to whether eNitiatives's "expertise" was or was not "required" for increasing the value of the inventions, completely contrary to the provisions of the agreement.

30. This indicates that the manner in which this clause was drafted was intended to conceal: **(1)** the fact that eNitiatives provides legal services without qualification; **(2)** a partnership and/or prohibited distribution of profits between HH law firm and a party that is not a law firm (eNitiatives), contrary to the Bar Association Rules (Professional Ethics), 5746-1986 (hereinafter: the "**Ethics Rules**"), and the Bar Association Law, 5721-1961 (hereinafter: the "**Bar Association Law**").

31. On February 28, 2013, **and at Cortica's express request**, HH and Cortica executed an amendment to the 2011 Agreement, which included an addition to the special condition. Such amendment limited the total number of shares eNitiatives shall be able to exercise into options to 0.5% of Cortica's share capital, as follows:

> **"Furthermore, subject to the below acceptance by both Cortica Ltd. and eNitiatives, we agree to have the Letter of Engagement modified so that an overall cap of 0.5% of the outstanding shares of Cortica shall be set for the holding of eNitiatives in Cortica and that the "then known price per share" shall be fixed at US$ 65 per share for any shares not issued to eNitiatives to date, and be in effect until such time that the "known price per share" is determined at a new round of investment into Cortica."**

The amendment to the 2011 Agreement dated February 28, 2013 is attached hereto as **Annex "8"**.

C.1 (III) 2016 agreement - Adv. Agassi intentionally misleads Cortica, his client, when executing the agreement

32. After Mr. Ophir Marko qualified as a patent agent in Israel, eNitiatives was no longer required to hide behind HH law firm, and, apparently as a result of which, decided to separate from it and become independent. On December 21, 2015, Adv. Agassi sent Cortica's CEO, Mr. Igal Raichelgauz, the following two agreements for execution: **(1)** a document terminating the agreement with HH; and **(2)** a new fee agreement, in which eNitiatives again directly engages with Cortica (hereinafter: the "**2016 Agreement**").

In this email, Adv. Agassi presented the change as a technical issue, and noted that in reality such is the same agreement, other than the confidentiality appendix thereto:

> **"…basically follows the text of the previous agreement, but also include[s]a confidential disclosure clause and agreement…"**

On December 27, 2015, Adv. Agassi sent a reminder email, and in such he also noted that they were dealing with the same agreement:

> **"Can we please take care of this? The agreement matches our older one besides the change of our entity"**

The email from Adv. Agassi dated December 21, 2015 with all of its attachments, and the reminder email dated December 27, 2015 are attached hereto as **Annex "9"**.

33. **However, Adv. Agassi apparently "forgot" to note that there were many and material changes** between the draft agreement he sent and the 2011 Agreement and its amendment. For example:

33.1. Adv. Agassi **"forgot" to include in the 2016 Agreement the clause that limits the total options and/or shares that eNitiatives can accrue to 0.5%** of Cortica's total capital. This, notwithstanding, that as aforementioned, this clause was included in a special amendment to the 2011 Agreement and at Cortica's explicit request;

33.2. Adv. Agassi "forgot" to note that the 2016 Agreement includes acceleration in the event of termination of the agreement, while in the 2011 Agreement the acceleration only relates to an M&A event of Cortica's assets/shares;

33.3. Adv. Agassi "forgot" to note that the 2016 Agreement includes a provision whereby the options shall only expire in the event of M&A or IPO, while prior to the 2011 Agreement the options expired under the conditions of Cortica's option plan (which allows 90 days to exercise the options following the termination of the services - see Chapter C.1 (IV) hereunder for more detail);

33.4. Adv. Agassi "forgot" the clause that mandates prior approval for expenses exceeding USD 500;

33.5. Adv. Agassi increased, at his own initiative, the charge for "milestone 3.5" (MS 3.5) from USD 1,250 to USD 1,500;

33.6. Adv. Agassi "forgot" to include the IP Audit clause (periodic reports - see Chapter E.5 (II) below) in the agreement, which regulates the payment of "Milestone 1.0" (MS 1.0) to once annually.

34. Cortica's CFO, Mr. Asher Avital (hereinafter: "**Mr. Avital**"), who only joined Cortica that year, noted the existence of many discrepancies between the 2011 Agreement and its amendment and the agreement, and therefore contacted Adv. Agassi on March 9, 2016, **and unequivocally requested that he send an amended draft that reflects the previous agreements, as declared by him**, while he describes some of the differences between the 2011 Agreement and what was sent to him:

> **"Please make sure that all agreements are reflected in the new one. Below are what we have found so far…"**

A copy of Mr. Avital's email dated March 9, 2016 is attached hereto as **Annex "10"**.

35. The next day, March 10, 2016, Adv. Agassi sent a response, including an amended draft of the 2016 Agreement.

A copy of Adv. Agassi's response email dated March 10, 2016 together with the amended version is attached hereto as **Annex "11"**.

36. In response, on April 5, 2016, Mr. Avital sent another email to Adv. Agassi, in which he made **another, clear and simple request,** that he make sure that this time he include in the agreement the provisions that were in the previous agreements:

> **"Please add the section for the cap. And make sure the wording remain as was before."**

37. That very day, Adv. Agassi sent a response with another draft. In this email Adv. Agassi gives the following response:

> **"Attached with the exact wording as before."**

The correspondence dated April 5, 2016 is attached hereto as **Annex "12"**.

38. However, this time as well, notwithstanding Adv. Agassi's explicit confirmation that such draft had the exact wording, he only amended the changes noted by Mr. Avital in the email dated March 9, 2016, and this too only partially.

39. In light of Adv. Agassi's declaration that such had the exact same wording, Mr. Avital was satisfied, and it was inconceivable to him that Adv. Agassi, as someone who represents Cortica and is meant to protect its rights - would deceive it once again after being caught red-handed.

40. Accordingly, Mr. Avital instructed Ms. Liron Kishoni (hereinafter: "**Ms. Kishoni**"), who worked under him, to quickly review the amended agreement and to execute it. Ms. Kishoni quickly reviewed the draft, found one negligible difference and executed it; however, **she did not notice the two very significant differences remaining between the 2016 Agreement and the 2011 Agreement**, which we shall refer to below.

Correspondence between Ms. Kishoni and Adv. Agassi including the 2016 Agreement executed in Mr. Avital's name is attached hereto as **Annex "13"**.

C.1 (IV) The outcome of the deception - options exercisable without a limit of time and acceleration payments for termination of the agreement

Options

41. Under the previous agreements (2008, 2011), eNitiatives was entitled to an allocation of options to acquire Cortica shares once per period (with a right of exercise of up to 0.5% of the value of Cortica's shares), this in accordance with Cortica's option plan and allocation approval by its board of directors (hereinafter: the "**Options Plan**"), and in accordance with a separate agreement for allocating the options that is subject to the options plan and calculated in accordance with milestones in the agreements between the parties. The last time Cortica allocated options to eNitiatives was October 15, 2014.

Cortica's Options Plan is attached hereto as **Annex "14"**. The options allocation agreement between Cortica and eNitiatives dated October 15, 2014 is attached hereto as **Annex "15"**.

42. As a party that was exposed to the Options Plan on a number of opportunities prior to executing the 2016 Agreement, through executing options allocation agreements which refer to the Options Plan and which rely on it, as aforementioned - eNitiatives knew well that Cortica only allocated options in accordance with the terms of the Options Plan, and is not permitted to issue options in a manner other than in accordance with the Options Plan without approval of its board of directors.

43. Section 10(a) of the Options Plan establishes that in the event of **termination of the agreement with a service provider** (eNitiatives) the options shall be exercisable for the duration of 90 days following the termination of engagement, and subsequently shall expire. Moreover, Section 10(c) of the Options Plan establishes that if **an agreement has concluded with a service provider for "cause"**, then all the options shall immediately expire. Among other things, "cause" includes:

> **"…(iv) any breach of the Optionee's fiduciary duties or duties of care towards the Company or of its Subsidiaries; including, without limitation, self-dealing, prohibited disclosure of confidential information of, or relating to, the Company or its Subsidiaries, or engagement in any business competitive to the business of the Company"**

44. In this context, one difference between the 2016 Agreement and the 2011 Agreement, which Adv. Agassi succeeded to smuggle in, while Mr. Avital relied on **his representation** that it was completely identical, is found in the special condition section, which **stipulates on the conditions of the Options Plan**. Adv. Agassi's addition, which was intentionally "inserted" by him in the center of the clause, is marked as follows:

> **"Special condition. Whereas the IPCS further requires consulting and resorting to industry and business specific knowledge which aims to increase the value of the inventions, you agree eNitiatives Business Consulting (herein after "EBC") will provide such services and will be entitled to compensation in the form of stock and/or options to purchase shares of Common Stock of Signee, on a per milestone basis, in an amount equal to the cash value of each such milestone divided by the then known price per share, with an exercise price that is the lesser of the then known price per share and the option price given to employees of signee, and fully vested (the "Equity"). Such Equity shall be granted no more than twice per calendar year and at any investment round. Such Equity shall remain exercisable, regardless of any termination, until the first to occur of: the closing of a merger of the Signee in or with another entity, the sale of all or substantially all of the shares or assets of the Signee, and the closing of an initial public offering of the Signee's securities. An overall cap of 0.5% of the outstanding shares of Cortica shall be set for the holding of eNitiatives in Cortica**

> **and that the "then known price per share" shall be fixed at US$ 65 per share for any shares not issued to eNitiatives to date, and be in effect until such time that the "known price per share" is determined at a new round of investment into Cortica."**

45. Not only was this wording not at all included in the previous agreements between the parties - rather, in practice, it is also **completely contrary to the terms of the Options Plan**, whereby eNitiatives shall have no right to options in the event of: **(1)** breach of its duties to Cortica (Section 10(c) of the Options Plan); or **(2)** the lapse of 90 days from the termination of the relationship between the parties if eNitiatives had not yet asked to exercise the options.

Acceleration Payments

46. An additional clause that Adv. Agassi succeeded to smuggle into the 2016 Agreement regards acceleration payments. Under the 2011 Agreement, the relevant clause **does not include a payment for all the milestones in the event of termination of the agreement:**

> **"Notwithstanding termination of this Agreement for any reason, options and/or payments as detailed above shall still be granted and/or paid if: (a) disclosure of the patent by Signee and/or Signee's employee to the firm was made prior to the date of termination, and (b) the firm materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination."**

It should be emphasized that in the 2011 Agreement, further along that very clause, there is **specific reference** to payment of all the milestones; however, this **is only in the event of M&A** for all of Cortica's assets or shares:

> **"Upon merger or acquisition of all, or substantially all, of Signee assets (an "M&A"), all pending milestones as detailed above shall be deemed completed and therefore options and/or payments will be due immediately upon closing of the M&A…"**

Reading the section clearly demonstrates that the 2011 Agreement intentionally separated between two instances: the one case - termination of the agreement, in which not all the milestones are paid. The explanation for this is clear: there is no need to pay eNitiatives astronomical amounts of money (as eNitiatives currently demands - no less than USD 780,000 !) solely as an "exit clause", when the patents did not even achieve the milestones and sometimes when nothing was done; the second case - acquisition of all or most of Cortica's assets and shares (exit) - since such is a joyous event which injects much money to all involved parties, there was logic to agree that in this kind of event (and only in such kind of event) all of the milestones should be paid.

47. However, in the "corresponding" clause of the 2016 Agreement, drafted by **Adv.** Agassi, there is a very minor "addition" of three words:

> **"Notwithstanding termination of this Agreement for any reason, Equity and/or payments as for all milestones as detailed above shall still be granted and/or paid if: (a) disclosure of the patent by Signee and/or Signee's employee to the firm was made prior to the date of termination, and (b) the firm materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination."**

48. Note well: in Mr. Avital's email dated March 9, 2016 (Annex 10 above), the issue of acceleration upon termination of the agreement was discussed by Mr. Avital and Adv. Agassi, while Mr. Avital clarified to Adv. Agassi that under the 2011 Agreement there was no "acceleration" in the event of termination of the agreement. Adv. Agassi however responded to Mr. Avital that such acceleration was indeed included in the 2011 Agreement (Annex 11 above); but in such he severely and knowingly misled Mr. Avital.

49. **It should be noted that due to Adv. Agassi being a lawyer, Adv. Agassi is subject to an increased duty of care and fiduciary duty *vis-a-vis* his client. This, in addition to the general duty to conduct oneself in good faith in negotiations prior to executing an agreement, and in addition to the known principle whereby in the event of a dispute in the interpretation of a contract, it should be interpreted to the detriment of the party that drafted it - *a fortiori* when the drafting party is a lawyer standing before its client, while in our case also the 2011 Agreement was drafted by the HH law firm.**

50. On the basis of these sections, which were achieved through real deception, eNitiatives "calculated" most of the amount of the claim that it filed (Section 51 of eNitiatives's statement of claim with its sub-clauses). It should be emphasized that **Cortica only discovered these gaps in the 2016 Agreement *post factum* - after termination of the engagement between the parties.**

C.2 MW and subsequently M&B - did not execute an agreement and the entire relationship was through eNitiatives

51. As aforementioned, the services were provided by eNitiatives, which from 2008 until 2014 was assisted by the MW law firm when in reality Mr. Ben-Shimon was the person who performed the services for Cortica at MW, despite the fact that he only qualified as a patent agent in the US in 2012. In 2014 Mr. Ben-Shimon left MW, and established M&B, which also handles patent registration. From such time, M&B replaced MW such that eNitiatives started providing Cortica with the services through M&B.

52. It should be emphasized, that at no stage was any agreement whatsoever executed between Cortica and MW, or M&B, since all of the work (including the professional work, calculating expenses, correspondences etc.) was done through eNitiatives.

53. One of the indications of the aforementioned is the fact that Cortica was not at all updated about the transition from MW to M&B but rather simply started receiving invoices from M&B rather than MW. After receiving the initial invoices, on July 2, 2014, Ms. Kishoni asked Adv. Agassi for an explanation about these M&B invoices, and whether this is in reality MW which changed its name. Adv. Agassi responded as follows:

> **"M&B IP Analysts is a new company that Michael established who replaces Myers Wollin"**

The correspondence dated July 2, 2014 regarding the transition from MW to M&B is attached hereto as **Annex "16"**.

54. This conduct, moving to another firm, another company, a separate legal entity, without asking Cortica anything at all, exhibits (like other indications) not only the fact that Cortica never directly entered an agreement with M&B which was an "arm" of eNitiatives and that matters were handled only through eNitiatives, but is also indicative of the manner that the Defendants conducted themselves with respect to Cortica, as described in great detail hereunder.

D. Inflated invoices - the Defendants did not meet the budgets undertaken by them

55. In 2016 Cortica started receiving inflated invoices from the Defendants totaling USD tens of thousands of dollars per month, for a long list of patent applications. As shall be explained below, it emerged (*post factum*) that many of the applications were drafted hastily and negligently, and many were drafted as separate applications when there was no justification or need for such, all in order to generate a strong "output" of applications, and to create a source of revenue and pump money from Cortica. If this is not enough, most of the patent applications were filed as CIP applications and not as independent applications, something which only emerged *post factum* as described in Chapters E and F hereunder.

56. Initially, when the invoices arrived, Cortica's representatives expressed their dissatisfaction to Adv. Agassi and to Mr. Marko with respect to the lack of control over expenses and lack of planning associated with such (at such time they were not at all suspicious of negligent conduct and believed they were concerned only with Cortica's interests). Accordingly, on January 31, 2017, Mr. Avital demanded that Adv. Agassi prepare a **comprehensive plan** for Cortica (all inclusive, including fees and the payment to M&B), based on a monthly budget of USD 10,000.

57. On February 16, 2017, Adv. Agassi sent a budget plan of **USD 236,000** for the entire year of 2017 (approximately USD 20,000 per month), which also included M&B's fees and the USPTO fees.

A copy of the correspondence regarding the budget and the plan totaling USD 236,000 dated February 16, 2017 is attached hereto as **Annex "17"**.

58. However, contrary to the agreed budget, Cortica continued to receive astronomical invoices. In an attempt to understand the reason for deviating from the budget, Mr. Avital again contacted Adv. Agassi and requested that he concentrate all the invoices received since the beginning of 2017. Adv. Agassi sent a spreadsheet detailing all the invoices issued from the beginning of 2017 (January 11, 2017-March 22, 2017). **The total invoices for the period of less than three months, totaled approximately ILS 241,000 (approximately USD 66,000) this only for eNitiatives' services, without M&B and without filing fees!**

A list of the invoices from January 11, 2017-March 22, 2017 and the correspondence accompanying this list is attached hereto as **Annex "18"**.

59. In order to put things in perspective, under the agreed budget, Cortica was only meant to pay eNitiatives USD 7,500 per month, such that the deviation described above is **3 times the agreed budget!**

60. However, Adv. Agassi explained in an email that most of the invoices were issued prior to the demand to reduce expenses, and that he expects that the expenses will decline in Q2 2017 and even suggested holding a meeting. Notwithstanding, it can already be said that the budget **agreed** upon by the parties did not reflect reality, or anything close to it.

61. After receiving the list of invoices, on April 4, 2017 Mr. Avital instructed **to stop** all activities, and requested to receive a working plan without filing new patents. Adv. Agassi exploited Mr. Avital's ignorance of patent law, and responded to Mr. Avital that in 2016 many provisional applications were filed **per Cortica's request**, and waiving the provisional applications and failing to convert them into permanent applications during 2017 would cause **rights to be lost and harm to Cortica**.

62. It should be emphasized that such fact is **incorrect**: **(1)** naturally, like all technology companies, Cortica wanted to protect its technology in the broadest possible manner *inter alia* through registering many patents **which justify such**. This does not mean that Cortica wanted to artificially be a "patent factory" and file dozens of applications without a real need. eNitiatives needed to examine and recommend to Cortica which (and how many) applications should be filed **based on the technological development of Cortica's products and based on interviews with the inventors**; however, this was not done, and applications were filed which were sometimes not justified from the perspective of their value relative to registration costs, without any consultation and reflection of reality on this matter to Cortica; **(2)** in such context, expenses could have been avoided while still avoiding a "loss of rights" **through consolidating many applications** into one or several applications which would have saved tens of thousands of dollars, if not more; however, eNitiatives preferred submitting as many separate applications as possible in order to "inflate" the fees paid to it.

63. Following such, on April 5, 2017 Adv. Agassi sent an updated (and inflated!) budgetary proposal of USD 384,000 for the entire year of 2017, assuming maintaining all the applications.

The updated (and inflated) budgetary proposal dated April 5, 2017 and accompanying correspondence is attached hereto as **Annex "19"**.

64. In light of these inflated amounts in the updated proposal, which deviate from the agreed budget by hundreds of percentages and which were unacceptable to Cortica, required Cortica to formulate a plan which would meet a reasonable budgetary target and which would protect its rights. In the framework of those discussions, eNitiatives represented that it is supposedly prepared to meet Cortica's requests by consolidating one of the milestones (the email attached as Annex 4 to eNitiatives' statement of claim while withholding the correspondence on this issue presented here). This is an exceptionally negligible concession that does not even come close to the extraordinary gaps in the agreed budget and the astronomical amounts Cortica was demanded to pay.

65. Finally, on May 4, 2017, Adv. Agassi sent Mr. Avital a spreadsheet including recommendations - which applications to abandon and which applications to maintain or resubmit (again, Adv. Agassi did not disclose to Cortica the possibility of consolidating applications and saving expenses), together with forecasted costs for implementing the recommendations, all - in the framework of a budget of USD 221,000 until the end of 2017. In response, Mr. Avital verified that such was a budgetary proposal which reflects **all the expenses** until the end of 2017, for all the recommended patent applications. **Adv. Agassi confirmed that such amount covered all expenses and protected all of Cortica's rights**.

The budgetary proposal dated May 4, 2017 and accompanying correspondence is attached hereto as **Annex "20"**.

66. But, once again, completely contrary to what had been agreed, Cortica continued to receive invoices which did not even slightly bear any semblance to the approved budget (and its amendment). Thus, on June 7, 2017, Mr. Avital sent Adv. Agassi an email which concentrated all of the **invoices for May 2017 alone, totaling approximately USD 77,000 for M&B, and approximately USD 27,000 for eNitiatives - meaning a total of approximately USD 104,000 for one month! Such amount constitutes approximately half of the expenses until the end of the year, which had been agreed upon only one month beforehand, and as aforementioned this is only for one month!** It is clearly apparent that we are dealing with a very extreme deviation from what had been agreed upon by the parties.

67. Adv. Agassi again tried to "exclude" these invoices from the agreed budget with unacceptable explanations. Mr. Avital answered Adv. Agassi that the requested amounts are much greater than what was expected and agreed upon under the agreed budgetary proposals and asked him - whether these payment requests change the annual expenses in accordance with the updated budgetary plan dated May 4, 2017? **Adv. Agassi simply did not respond to this email**, because he apparently thought that the approach of exploiting the situation in order to continue cheating Cortica would continue to work.

The correspondence dated June 7, 2017 is attached hereto as **Annex "21"**.

68. On July 12, 2017, Adv. Agassi sent an updated budget totaling USD 180,000 from August 2017 until the end of July 2018. However, it once again appeared that there is no correlation between reality and the budget, and as a result of which, Cortica decided to suspend payment of all payment requests that were not approved and which were not within the budget.

The budgetary proposal dated July 12, 2017 is attached hereto as **Annex "22"**.

69. Subsequently, in November 2017, eNitiatives sent a budgetary proposal for 2018 totaling USD 335,000, and a request for payments which Cortica refused (rightfully so) to pay in 2017, totaling USD 120,000, due to eNitiatives's deviation from the agreed budget.

70. This inflated proposal was almost twice as high as the last proposal from July 2017. When sending this inflated proposal, eNitiatives (and M&B) knew well, that there was no chance that Cortica would agree to it, such that once again we are dealing with a baseless attempt to extract funds from Cortica. **It should be noted that the total amounts Cortica was requested to pay for 2017 reached the astronomical amount of USD 508,000 ! Meaning more than double the agreed budget**. Obviously, Cortica decided that it would not pay the amounts deviating from the agreed budget.

Correspondence regarding disagreements during the period from January-March 2018 is attached hereto as **Annex "23"**.

71. When Cortica saw that this is the situation, it instructed the Defendants to refrain from filing new applications, and that any action related to existing applications only be taken after receiving prior written approval, and concurrently decided to perform an external examination of the Defendants' conduct.

72. In light of the outcome of this examination as set forth in Chapter E hereunder, in which Cortica first discovered the truth about the Defendants' negligent and deficient conduct, Cortica informed eNitiatives that it is no longer interested in receiving services from it and that it is terminating the engagement with it, and demanded that it send all material in its possession regarding Cortica's patent portfolio to another firm.

E. Cortica's external examination discovered negligent and clearly unprofessional work by the Defendants, which caused severe damage to Cortica - leading to the termination of the relationship between the parties

73. As foregoing, concurrently with the period in which Cortica received inflated bills, Cortica heard from the Defendants less and less on a professional level, meaning that Cortica received more bills while the Defendants started working more and more at their own initiative – inventors were hardly interviewed about new inventions, drafts were not sent, approvals were not requested for the actions performed, such as responding to office actions, filing patent applications, abandoning and reducing claims, etc.

74. This conduct, together with the lack of control over expenses, led Cortica to suspect something was not being managed properly, and it decided to hire external service providers to examine the Defendants' work in terms of the quality of the work relative to the fee, and as part of this to check whether there is any need for so many applications and responses, which were filed in the vast majority of cases at the initiative of eNitiatives and/or M&B alone.

75. This examination, following which Cortica decided to terminate the relationship with eNitiatives, **revealed a series of serious omissions and negligent acts by the Defendants,** in violation of almost every possible duty, part of which were deliberately hidden from Cortica for many years, as detailed below:

E.1. 114 CIP applications (!) over more than a decade (mostly from 2012 or later) - which reduced the period of protection over completely innovative technologies that justified new and independent patents

E.1 (I) More than a decade of CIP applications, completely contrary to Cortica's interests – whereby depriving Cortica of many years of protection over new technology

76. An examination of Cortica's patent portfolio in the US reveals the following findings:

76.1. Cortica has 172 applications or registered patents (hereinafter, jointly, for the sake of convenience: **"Registrations"**) filed by eNitiatives since 2008; of which 161 Registrations in the US;

76.2. Out of 161 Registrations in the US - **there is a very limited number of parent patents,** most of which were filed between 2006 and 2008;

76.3. Out of 161 Registrations in the US - **no less than one hundred and fourteen (114) applications are CIP applications (!).** This constitutes approximately **70% of the US portfolio;**

76.4. **All 114 CIPs, including patent applications filed in 2017(!) are linked to parent patents which were filed more than a decade ago. In other words, there are patent applications which were not yet granted, which are expected to receive less than ten years of protection;**

76.5. 96 of the 114 CIP applications were filed from the end of 2012. All of these, without exception, will benefit from less than ten years of protection.

77. To understand the omissions and severe negligence in the Defendants' actions in building a portfolio of this kind, which relies mostly on CIP applications, we must understand what a CIP (Continuation in Part) application is, what it is designed for, what are its advantages and disadvantages, when it should be used, and most importantly - when it should not be used.

78. CIP applications are a practice unique to the United States, and their main advantage is that the first patent application (the parent patent application) is not considered prior art with respect to a CIP patent that includes new information that was not included in the parent patent application.

79. For example: Let us assume that a certain company developed a certain product and filed a patent application for it (hereinafter: the **"Parent Patent Application"**). Meanwhile, after the filing date of the Parent Patent Application, the company develops some kind of technological improvement in the product for which the Parent Patent Application was filed (hereinafter: the **"Technological Improvement"**). The

Company can file a CIP patent application **protecting the Technological Improvement** (new matter) – so that the Parent Patent Application does not constitute prior art against it.

80. In order to enjoy the main benefit of the CIP application, it must be filed **no later than one year** of the date of publication of the Parent Patent Application – this time limit is rigid. If the CIP application is filed after a year has lapsed, then the main advantage of the CIP is annulled, and the Parent Patent Application (like other publications from the period of the Parent Patent Application) may serve as prior art, thereby causing the cancellation or reduction of patent claims in the CIP application – whether in the course of the CIP application's examination by the US Patent Office or in the period after receiving the CIP patent.

81. Additional advantages of CIP applications are that these are usually examined in a shorter period of time by the US Patent Office, and in many cases require less work (on the part of law firms/patent agents).

82. **However, the main advantage of the CIP application comes at a "hefty price" - the patent's period of protection (if granted) is measured from the filing date of the Parent Patent Application, and not from the filing date of the CIP patent application, so that the period of protection for a CIP patent is necessarily shorter than that of an independent patent.**

83. It is emphasized that in case of a CIP patent application which requires a priority date from a chain of patent applications, the protection period of the CIP patent (if granted) shall start on the date of the first application in this chain. Thus, for example, US Patent US9466068B2, which was filed as a CIP application in 2015 (internal ref. no. COR-108), is linked (by a chain of six CIP applications) to a Parent Patent Application from 2006 - will benefit from a protection period that begins in 2006, and therefore the protection period of the patent shall only be 11 years - instead of 20 years.

84. Therefore, when a CIP application is not filed within the strict time limits, not only can it not benefit from the advantages of a CIP application (examination in light of prior art that existed in the period of the Parent Patent Application), but it also causes substantial damage to the patent owner, since the patent owner pays "a hefty price" in the form of reducing the patent's protection period (if granted) – for no reason.

85. This is a very unusual portfolio which, on the face of it, proves severe negligence and defects on all matters relating to the Defendants' conduct.

E.1. (II) Cortica's core technology has changed – but the Defendants did not bother to adjust the wording of the change applications – and filed almost no new independent applications, but continued mainly to file CIP applications linked to applications filed more than a decade ago, thereby shortening the protection of new inventions

86. Cortica's core technology includes creating a unique representation (signature) of natural signals, such as a photo, enabling identification, classification and sorting objects, behaviors, patterns etc.

87. Let us take, for example, a car that is taking a video of its environment:

87.1. The environment includes different objects (such as – other cars, pedestrians, roads, buildings, traffic lights, crosswalks, etc.);

87.2. Identifying the various objects starts with creating a signature of the environment (based on the environment's image);

87.3. The environment's signature is compared to databases (concepts) which were already attributed to various types of objects. For example: one database represents a car of a certain model, a second database represents pedestrians, a third database represents crosswalks.

87.4. The comparison's results provide information on the objects in the environment.

88. Creating the databases (concepts) is performed mainly autonomously and without guidance, requiring no human intervention. For example: The system is capable of autonomously processing a great number of pictures to create databases representing different objects. This method allows creating accurate databases independently of manual processing (such as tagging objects) of the images. This method allows updating the databases dynamically and without human intervention.

89. Cortica's core technology allows identifying objectives and is unsusceptible to obstructing objects, lighting, distance, change of angle, colors etc., and allows identifying the object in almost any situation.

90. Starting from 2012, some of the foundations of Cortica's core technology changed in relation to the core technology in place between 2006 and 2008 (the years in which the parent patent applications were filed). Such changes include, *inter alia*, changes in creating the signature and changes in concepts.

91. These material technological changes (especially in the field of the core technology) justified drafting new and independent patents which would receive 20 years of protection and be worded differently. These patents could even serve as parent patent applications for CIP applications to be filed within the rigid timeframe.

92. However, the defendants failed to include the material changes in the wording of the patent applications, and did not file new and independent patent applications protecting such changes, and instead continued to file CIP applications using a "copy-and-paste" method, based on parent applications filed more than a decade earlier as foregoing – thus reducing the period of protection granted for the patent and without the relative advantage of CIP applications.

E.1 (III) The many CIP applications were meant for obtaining lots of quick and easy money, in consideration for little work

93. The Defendants drafted the CIP applications with a "copy-and-paste" method using information (even if not always relevant) from one or more parent applications, and added the technological improvement (new matter) negligently. There is no doubt that such (negligent) work is much easier and faster than drafting a patent application "from scratch", which certainly requires more effort in thinking and a much greater investment of time.

94. Therefore, the Defendants found it "easier" to continue with the "copy-and-paste" method, while in fact undermining the ability to protect technologies and applications for new concepts, which now receive fewer years of protection (sometimes 7 years and even less, instead of 20).

95. The reason for filing Cortica's patent applications by way of a CIP application, and the way in which they were drafted, demonstrate that the desire was to create a large number of applications quickly and thereby earn as much money as possible, as quickly as possible, while putting in as little work as possible.

96. **The fact that it is much easier to draft different applications (including CIP applications) in a negligent "copy-and-paste" method, and the fact that CIP applications are examined in a relatively fast proceeding (usually much faster than ordinary patent applications) were those considered by the Defendants, instead of Cortica's interest as a client.**

97. As detailed in Chapter C.1 above, the fee arrangement with eNitiatives was based on milestones. In other words, on "progress" in the registration proceeding according to stages and the number of applications. Therefore, eNitiatives had a clear interest to file as many patent applications as possible, to be examined as quickly and as easily as possible, and to achieve all milestones easily and quickly – **regardless of the "quality" and the duration of the protection which Cortica's patents receive in reality, and regardless of the effort invested (or not) in working on the patent applications**. This interest, of quick and easy enrichment, contradicted Cortica's interest to receive better protection for its patents for as long as possible.

98. M&B also "did not mind" charging the full fee as if these were independent patent applications, for many applications filed with the "copy-and-paste" method, making relatively minor additions (new matter only).

99. Apparently, the Defendants saw that it worked well for them, decided that Cortica is a production line for money (and options too, in the case of eNitiatives) in consideration for easy work – and they made a nice profit – **as opposed to Cortica which paid a lot of money in consideration for patents that provided weak and short-lived protection, and did not even know it was being deceived for years(!)**, as detailed in Chapter F below.

E.2 The Defendants stopped involving Cortica in registration proceedings, including with respect to highly material decisions, while favoring their personal benefit over Cortica's interest

100. Like any professional providing services, a prerequisite condition which constitutes a professional and even ethical duty, is to submit to the client drafts for approval and comments, meet the client to explain the implications of any action, present it with alternatives and substitutes, consider together different wordings, and finally receive approval to perform material actions or actions requiring payment of money.

101. An examination of the Defendants' conduct demonstrates that at a certain stage they simple allowed themselves to disregard these basic duties, and acted in violation of the duties of care and professionalism

required from them. Below we shall detail some non-exhaustive examples of the Defendants' negligent acts and omissions in this context:

102. **They responded to patent examiners' reservations (office actions) without consulting Cortica, sometimes while significantly reducing claims without approval, thereby undermining the scope of protection over the patent.** Cortica received only invoices.

103. **They did not present Cortica with the possibility of filing consolidated applications or consolidating existing applications to reduce costs**. The Defendants acted in **severe conflict of interest** when they did not present Cortica with the option of consolidating applications highly similar to each other (we recall that a significant part of the portfolio is "copy-and-paste", with minor changes), into one or several applications, thereby saving tens and maybe hundreds of thousands of dollars. This is made even worse by the fact that Cortica demanded to stop and only work according to an orderly budget. The facts are clear – eNitiatives had an evident interest to file as many separate applications as possible, rather than one application consolidating everything, **since the fee was calculated by the number of applications and the milestones** reached by each application. M&B also had an interest to file as many applications as possible with as little work as possible, enabling charging a fee as if these applications were prepared "from scratch."

104. **Cortica was not sent application drafts for approval**. In the above context, it was for good reason that in dozens of cases, patent applications (both provision and non-provisional) were filed without Cortica approving the application draft, sometimes without Cortica even receiving a draft, and sometimes without Cortica even approving the filing of any application. Cortica received only the invoices, in better cases with the application that was already filed and in worse cases without a copy of the application. We can only wonder – how does a patent agent file a patent application without receiving the client's approval, and without knowing whether the patent's wording is up-to-date and accurate with respect to the client's technology?

105. **No discussions / meetings / presentation of alternatives were held**, regarding the wording of the patent applications, the manner of presenting facts therein, possible alternatives, advantages and disadvantages in drafting claims this or that way, and such basic matters expected from professionals in providing services of this type.

106. **Applications were converted from provisional to non-provisional without approval and without updating the application's content as expected**. In several instances, applications filed as provisional were converted to non-provisional, without consulting or asking Cortica. Here again, one of the main purposes of filing a provisional application is to **"benefit" from the priority date** granted by the provisional patent application, and also to **"benefit" from a year in which it is possible to improve and upgrade the invention under the application, and to update the non-provisional application**. Clearly, the conversion of a provisional application into a non-provisional application after one year, without making sure with Cortica that there were no improvements or upgrades in the year since filing the provisional application, is an unreasonable act (to put it mildly).

107. **They stopped interviewing inventors.** In the last two years of the parties' relationship (2016-2017), almost no inventors were interviewed regarding new inventions. This did not stop the Defendants from filing many dozens of new registration applications in these years. This conduct is strange and irregular, and significantly and adversely affected the wording of part of the applications, and the only reason for this is that inventor interviews (as opposed to filing applications) – were not prescribed a fee.

108. **A provisional application was filed in February 2017 (COR-210) and was simply "forgotten", until it expired in February 2018, without a regular patent application being filed a year later, thereby preventing Cortica from benefiting from the priority date of that provisional patent application**. Provisional patent applications expire one year after their filing. To benefit from the priority date granted by a provisional patent application, the provisional patent application must be converted into an ordinary, non-provisional patent application in the same year. The Defendants apparently "forgot" about the provisional application and it expired after one year. Needless to say, this is **pure negligence**, which caused unnecessary wasting of Cortica's money, and undermined the protection of its intellectual property. For the avoidance of doubt, it is emphasized that this application expired before the termination of the relationship between the parties. Moreover, eNitiatives explicitly undertook towards Cortica that it would convert this provisional application into a non-provisional application as part of the budget proposal dated July 12, 2017 (Annex 22 above).

109. **They announced abandonment of patent application COR-088, which eNitiatives estimated in reports to be valued at USD 1-3 million(!), without approval or consultation**. The supposedly "professional" explanation provided *post factum* for abandoning patent COR-088, **completely contradicts "professional" conduct in other patents**. The Defendants argue that they believed that the claims in the application should not be reduced so that they include certain restrictions. However, in several other Cortica patents, the Defendants did not hesitate to reduce the claims in similar fashion, and did not abandon the application. In any case, clearly with respect to such a dramatic decision, the Defendants should have received Cortica's approval, taking into consideration the fact that we are dealing with a patent that they themselves appraised at USD 1-3 million (Annex 24 below).

110. **M&B registered itself as the owner of PCT applications (international applications), which placed it in a conflict of interests**. This was done for no real reason, since it would have been possible to file PCT applications with the Israeli Patent Office or the International Patent Office (IB) - and this was also done without informing Cortica. This practice is utterly unacceptable.

111. We summarize by stating that the foregoing system of acts and omissions reflects conduct that is no less than outrageous, in every possible aspect. The logic is also that attorneys or patent agents work on behalf of and for their client and have no right or authority to act without the client's consent.

E.3 The Defendants changed nothing in the manner of drafting the applications, even after significant transformation in US law with respect to software patents - which exposed the applications to rejection for the inventions being deemed an "abstract idea"

112. On June 19, 2014, the US Supreme Court handed down judgment in the **Alice Case**[2] which determined that patent protection shall not be granted to a computer-implemented method for exchanging financial obligations between two parties, using an intermediary third-party, which reduces the risk that one party to the financial transaction would not fulfill its obligations to its counterparty.

113. As a result, on June 25, 2014, the USPTO issued a precedential memorandum, that included examination guidelines in light of the judgment, stating that it should be examined whether the invention is deemed an abstract idea, in which case it shall not be eligible for a patent. In recent years, the USPTO issued several additional directives on this matter.

114. It should be noted, that the **Alice Case** and the resulting change in USPTO policy led to a significant reduction in the filing of patent applications in the field of software in the US, an increase in the number of office actions refusing to accept patents for registration on the basis of Section 101 of the US Patent Act, an increase in the rejection of software patent applications, and an increase in cancelation of patents in courts.

115. On May 26, 2016, judgment was handed down in the **Enfish Case**[3], which also dealt with software patents. In the judgment, a series of rules and tests were determined for demonstrating an improvement in the functioning of computer software, in order to overcome office action on the matter of an "abstract idea" by virtue of Section 101 of the US Patent Act.

116. **We would expect such dramatic shifts in US law with respect to software patents, to be addressed in some way by Cortica's representatives, a company that, as we remember, develops software inventions, with respect to registering software patents in the US. We would also expect that the manner of drafting the applications would change in accordance with the change in the law.**

117. However, the Defendants **did not even bother to update** Cortica on these dramatic shifts, and worse **did not change anything in the manner of drafting the applications**, and not only did the number of Cortica applications not decrease since 2014, it in fact increased significantly.

118. As a result, many applications filed by the Defendants were refused with reservations on the basis of Section 101 of the US Patent Act, and Cortica was forced to expend money to deal with these reservations in its attempt to register the patents. It should be noted that in some cases, it is impossible to overcome the reservations due to the basic faulty wording of the patent applications. In addition, some of the patents that were received are weak, difficult to enforce and exposed to cancellation proceedings.

E.4 Many patent applications were drafted in an amateur and negligent manner, so as to render some of Cortica's patents unenforceable and exposed to

[2] **Alice Corp. v. CLS Bank International**, 573 U.S. 208, 134 S. Ct. 2347 (2014).

[3] **Enfish, LLC v. Microsoft Corp.**, 822 F.3d 1327 (Fed. Cir. 2016).

cancellation proceedings and "indirect challenge" (even more so in light of the aforementioned judgments in the Alice Case and Enfish Case)

119. As Cortica shall now demonstrate, a significant part of the patent applications and patents (most of them CIP, as provided in Chapter E.1 above) are registered on a truly amateur level, and are plagued by a very long line of inaccuracies, which expose them to cancellation proceedings and/or "indirect challenges" in the framework of infringement proceedings:

120. **Negligent wording in the "copy-and-paste" method**. Sometimes the copy-and-paste material was not even relevant to the technology which the patent application purported to represent (for example, a patent referring to image recognition technology, while the attached figures to illustrate it refer to sound recognition (!) technology.

121. **Drafting superficial, insufficiently detailed applications**, sometimes with what appears like minimal investment of work.

122. **Drafting patents negligently, so that they do not describe how Cortica's technology works or what exactly it consists of**. For example, many patents state a general "wish list" of sorts, of how some of the components "should be" designed, instead of stating how the components were realized and implemented, as follows:

> **"Computational Cores Generation is a process of definition, selection and tuning the Architecture parameters for a certain realization in specific system and application. The process is based on several design considerations, such as:**
>
> **(a) The cores should be designed so as to obtain maximal independence, i.e., the projection from a signal space should generate a maximal pair-wise distance between any two computational cores' projections in a high-dimensional space.**
>
> **(b) The computational cores should be optimally designed for the type of signals, i.e. the computational cores should be maximally sensitive to the spatio-temporal structure of the injected signal, for example, and in particular, sensitive to local correlations in time and space.**
>
> **(c) The computational cores should be optimally designed with regard to invariance to set of signal distortions, of interest in relevant application."**

With all due respect, this is not a patent wording.

123. **Wording by way of vague "incorporation reference" to other patents**. Often with sweeping reference to patents which also vaguely refer to other patents, so that it is impossible to understand what the patent refers to exactly - all this without examining the compatibility between the referring patent and the referred patent.

124. **Vague, amateurish and even mistaken wording, from which it is impossible to understand what exactly is protected by the patent**. Just for an example: using the wrong terms, referring to the features of a product or method without explaining how the feature is achieved, lack of sufficient details, using relative and nonquantitative terms, failure to include terms appearing in claims in the application itself. All these expose the patents to cancellation proceedings or indirect attack - for example, by virtue of Section 112 of the US Patent Act.

125. **In the same context, wording that does not include implementation of the Alice Case and Enfish Case judgments regarding the accurate description of the improvement of the computer software's operation.**

126. **Wording reflecting old Cortica technology in patents that should protect newer Cortica technology**. As provided in Chapter E.1 (II), Cortica's technology changed over the years, but a large number of patent applications and patents do not reflect this, and are limited to the technology as it was between 2006 and 2008.

127. It is emphasized that this is a partial and non-exhaustive list.

E.5 The Defendants failed to outline a correct and efficient strategy for protecting Cortica's intellectual property, and this negligent conduct also lead to a failure in appraising the patents

128. As we can see from the agreements between the parties (even in the agreement with HH), and as we can also see on the eNitiatives website at <www.enitiatives.biz>, it presents itself as a firm that: **(1)** builds and outlines intellectual property protection strategies; **(2)** provides appraisal and commercialization services for intellectual property, and patents in particular.

E.5 (I) The "IP Protection Strategy" turned out to be an illusion

129. One of the purposes of Cortica's engagement with eNitiatives was for the latter to outline for Cortica a protection strategy for its intellectual property. In retrospect, Cortica discovered that eNitiatives, together with M&B, utterly failed to do so. This failure consists of two factors:

130. First, as detailed extensively above, the filing of dozens of applications which caused the waste of Cortica's funds and resources, in a most unprofessional manner and as CIP applications which shall for the most case expire already in 2025, a first-class strategic failure;

131. Second, not appropriately addressing developments in intellectual property laws in China – the world's second largest economy. Almost a decade ago, already, significant transformations took place in intellectual property law in China, including, *inter alia*, adjustment of China's intellectual property law to international treaties, and later on the establishment of special intellectual property courts in China (alongside stricter penalties for violators of intellectual property rights and significant compensation). Accordingly, China, which was well-known as an empire of imitation products and a country where

intellectual property rights are not enforced, slowly became a place where protection of intellectual property rights is advisable.

In particular, with respect to software patents, in October 2016, the State Intellectual Property Office (SIPO) in China published a directive according to which computer software, which was not considered until then eligible for protection as a patent, shall be considered eligible for protection. eNitiatives did state, at some stage, that it is necessary to file patent applications in additional countries, and mentioned China, however in verbal conversations Cortica was told that it is not economical to file patents in China. eNitiatives never updated Cortica on the significant changes that took place in China, and in any case, patents were never filed in China.

E.5 (II) The Defendants' negligent and unprofessional conduct adversely affected the patents' value

132. Pursuant to agreements between the parties, eNitiatives would supply, on an annual/semiannual basis/at Cortica's request, reports on the status of Cortica's patents, to be presented before the board of directors and/or potential investors.

Reports for example from 2015 and 2016 are attached hereto as **Annex "24"**.

133. In these reports, eNitiatives would provide Cortica with evaluations regarding the patents' financial value. In retrospect, Cortica discovered that in quite a few cases, the value of the patents turned out to be lower than appraised by eNitiatives.

134. The adverse effect to the patents' value derived from the Defendants' negligent conduct:

135. First, the weak protection of patents extensively described above – with respect to the scope of the protection, its quality (the ability to challenge it) and its duration – impair their value.

136. Moreover, they failed in creating a portfolio suitable for commercialization, which also directly affects the valuations.

137. We shall illustrate with an example, well-known to the Defendants: In 2017, Cortica was approached by Mr. Chris Sommers of ThinkFire, a firm specializing in IP commercialization, with the purpose of examining the possibility of purchasing part of Cortica's patents. Mr. Sommers even talked and conducted a correspondence with the Defendants. In his email dated October 27, 2017 to Cortica – **cc'd to Adv. Agassi and Mr. Ben-Shimon** – Mr. Sommers emphasized what they were also told verbally, that the manner in which Cortica's portfolio is constructed, as "one big family" of patents, makes it very difficult to commercialize the portfolio, and leads to a decrease in the patents' values.

The correspondence with Mr. Sommers on the matter of patent commercialization is attached hereto as **Annex "25"**.

138. It should be noted that even after this criticism, the Applicants did not change anything and continued working in the same manner (until the termination of the parties' relationship a few months later). Moreover, in the aforementioned correspondences, we can see that Mr. Raichelgauz requested Adv. Agassi, twice, to receive some sort of response/explanation from him regarding the **vast gap** between the information presented by the Defendants over the years and the new (and real) information received from Mr. Sommers. **Adv. Agassi simply ignored this simple request made by Mr. Raichelgauz (twice), and again we can only wonder why.**

F. For years the Defendants concealed from Cortica the fact that most of its portfolio consisted of CIP applications, and did not explain the implications of CIP to it

139. An examination of the reports provided over the year with respect to the patents' status reveals that the Defendants hid from Cortica the fact that most of its portfolio consists of CIP applications (copies of reports from 2015 and 2016 are attached hereto as Annex 24).

140. For example, in a report dated September 6, 2015, only 19 applications appear as CIP, while at that time, 64 applications were CIP. In a report dated March 6, 2016, only 20 applications are termed CIP, while at such time, 64 applications were CIP.

141. Even worse – in the last report sent by Adv. Agassi in February 2018, **only 3 out of 114 (!) applications were termed CIP,** while the balance **– 111 applications – were termed Utility: Non-Provisional**, instead of stating that they were CIP applications.

This is a misleading name, since it is customary to call a CIP application Utility: Continuation-in-Part (as was also performed in the February 2018 report, with respect to 3 applications out of 114), and not by the general name "non-provisional".

The February 2018 report is attached hereto as **Annex "26"**.

142. Cortica received the February 2018 report on February 4, 2018, at the request of Cortica's COO, Mrs. Karina Odinaev. The first of the service providers hired by Cortica to examine the Defendants' conduct was an external patent agent, which saw the report and was **shocked** – both by the fact that there are so many CIP applications, and by the fact that Cortica was not even aware of this and was in fact misled for all these years.

143. The same patent agent then explained to Mrs. Odinaev the implications of CIP – **this is in fact the first time that anyone in Cortica understood the damage to the protection period resulting from filing a patent application as a CIP application!**

144. Following this, and after additional clarifications with several professionals, Cortica understood how severe the deceit was. In an attempt to receive some explanations, on March 6, 2018, Mrs. Odinaev sent an email to Adv. Agassi, to which she attached one of the applications (COR-179) as appears on the

USPTO website, and asked why it was presented in the February 2018 report as Utility: Non-Provisional rather than as a CIP application:

> **"I've been reviewing the docket you sent, and have the following question: Cor179 appears as utility: non-provisional in the docket file. If I understand correctly, the actual application (attached) says its CIP, I would expect the docket to show this as a CIP. Am I missing something?"**

145. In his response to Ms. Odinaev question, Adv. Agassi continued to try and deceive, and answered that in fact this was an independent application, that includes references to CIP as prior art only:

> **"In this case we mentioned several prior art items as references although the disclosure itself is stand-alone started as a provisional patent application."**

The correspondence between Ms. Odinaev and Adv. Agassi on the matter of the February 2018 report is attached hereto as **Annex "27"**.

146. From Agassi's statements it arises, that the same application claims a priority date only from a provisional application filed in 2016!

147. This is pure deceit. **Not only is COR-179 a CIP patent application, it is in fact a CIP application based on a chain of six CIP applications going back to a 2006 parent patent (this in addition to the provisional application from 2016).** The last thing that one could say about this application is that it is a **"stand-alone… application!"**.

COR-179 (US Patent Application no. US20180018337A1) is attached hereto as **Annex "28"**.

148. To explain, if COR-179 is granted, then as opposed to Defendants' argument, the period of protection would be counted from 2006, rather than from its filing date in 2017.

G. Double charges

149. To understand the astronomical bills that Cortica received, it is important to understand that in fact, according to the work model in place between the parties, Cortica paid **twice, without its knowledge, for the exact same work**, both eNitiatives and M&B, in complete contradiction of the representation made by eNitiatives to it to begin with whereby the services that it provides it should save it money. We shall illustrate this with an example:

Let us assume that eNitiatives drafted a draft of a certain patent application and sent it to M&B for comments and/or filing etc. – i.e. MS 1.0 – **USD 2,500** according to the 2016 Agreement; at this stage, eNitiatives's work is in fact finished, and M&B goes over the draft, makes comments on it (including comments that are mostly technical and concern "phrasing", since eNitiatives is the one that is supposed to be in touch with the inventors – and sometimes no comments at all were given) and files it; in such a

case, Cortica pays eNitiatives **an additional USD 2,500** for the filing (MS 2.0), even though eNitiatives did not file the application itself and performed no action at this stage;

In addition, eNitiatives also paid a fee to M&B, at an amount more or less identical to MS 1.0 + MS 2.0 – **approximately USD 5,000** for "drafting patent application" and filing, as if M&B drafted the application itself "from scratch"; this amount still does not include charges and responses to examination reports and office actions, if any, and does not include the stage of receiving the patent (MS 3.0), for which eNitiatives collected **an additional USD 3,000** from Cortica, without performing any action (this is a decision by the USPTO patent examiner to accept the patent for registration).

In other words, approximately USD 13,000 (USD 8,000 to eNitiatives, another USD 5,000 to M&B), excluding office actions and expenses, and of course excluding the allocation of options to eNitiatives.

150. **These facts are many times worse in light of the fact that most of Cortica's patents were written in a negligent "copy-and-paste" method** used by the Defendants, while filing over a hundred CIP applications that rely on a limited number of parent patents (Core Patents) as detailed in Chapter E.1 (III) above, so that the work in reality for most patents was very negligible and did not justify the inflated amounts.

151. Cortica started discovering these double payments only when the number of applications increased significantly, without its approval, and the amounts became astronomical as foregoing, and after external service providers examined their conduct on behalf of Cortica as detailed above.

H. The normative framework - causes of action

H.1 The Defendants were grossly negligent in providing the services to Cortica, and caused it severe damages

152. The Defendants' actions as detailed above constitute **extreme negligence and/or a series of extreme omissions** pursuant to Sections 35-36 of the Torts Ordinance [New Version] (hereinafter: the **"Torts Ordinance"**), since reasonable legal advisors dealing with patent laws (attorneys/patent agents) should have been familiar with the material and practices of their occupation, and as a result:

152.1. The Applicants should not have filed 114 CIP applications over more than a decade, in a manner which most significantly shortened the period of protection to be received by Cortica's patents. In addition, the filing of the CIP applications exposed the patents to office actions/cancellation proceedings/indirect challenges. Moreover, the Defendants should have explained the implicants of CIP to Cortica;

152.2. The Defendants were supposed to get Cortica involved in the registration proceedings, and as part of this to send it drafts for comments and receive its approval for performing the various actions detailed above, certainly when dealing with actions such as abandoning or reducing claims, and *a*

fortiori abandonment of a patent application. The Defendants were not supposed to "forget" a provisional application and let it expire – but they acted in violation of all of the foregoing;

152.3. The Defendants were supposed to implement the changes in US law with respect to software patents but failed to do so: the Defendants should have drafted the patent applications professionally, as to reflect the changes in Cortica's technology, in particular in light of changes in US law as foregoing, but instead drafted the patents in a clearly unprofessional, vague and amateur manner, so as to make part of them unenforceable and exposed to office actions/cancellation proceedings/indirect challenges;

152.4. The Defendants were supposed to outline an efficient protection strategy for Cortica's intellectual property, correctly appraise the patents and build the portfolio as to allow its maximal and efficient commercialization, bur utterly failed to do so by filing 114 CIP applications, and build the entire portfolio as "one big family", in a way that does not allow separation and efficient commercialization of the patents and impairs their value. The Defendants also ignored explicit clarifications on this matter;

152.5. In addition, the Defendants failed in that they did not attribute any importance to transformations taking place in Chinese patent law.

153. The Defendants were negligent in purporting to provide Cortica with professional services, when in reality, for a long time, they were not even certified to provide such services.

154. eNitiatives was negligent when it misled Cortica with respect to the 2016 Agreement, in order to improve terms *vis-à-vis* Cortica.

155. The Defendants were negligent when they misled Cortica from understanding that it is in fact paying double (to eNitiatives and M&B) for each action they perform.

156. The Defendants were negligent when they preferred their personal interest over Cortica's interest.

H.2 Negligent misrepresentation and fraud, fundamental breach of the Agreement or at least its performance in extreme lack of good faith

157. Deliberately concealing the fact that 70% of Cortica's portfolio consisted of CIP applications for years, and in particular the implications of CIP; Adv. Agassi's attempt to conceal this fact even after he was explicitly asked about it as foregoing; misleading Cortica with respect to the 2016 Agreement; misleading Cortica with respect to the double payments that the Defendants charged it; and misleading Cortica regarding the Defendants' ability to provide it with the services, even though they were not certified to do so – amount to negligent misrepresentation and even fraud pursuant to Sections 35-36 and 56-57 of the Torts Ordinance.

158. Moreover, the Defendants' conduct described in the Statement of Counterclaim above also constitutes a fundamental breach of the agreement between Cortica and eNitiatives, pursuant to Section 6 of the Contract Law (Remedies for Breach of Contract), 5731-1970 (hereinafter: the **"Contract Law – Remedies"**), and also lack of good faith in performing the contract between Cortica and eNitiatives, in violation of Section 39 of the Contract Law (General Part), 5733-1973 (hereinafter: the **"Contract Law"**).

H.3 Deception and exploitation, lack of good faith in negotiating an agreement and violation of an attorney's fiduciary duties towards his client

159. The Defendants' conduct, and especially that of Adv. Agassi from eNitiatives, on all matters relating to Cortica's deception with respect to the 2016 Agreement, constitutes lack of good faith in negotiating the signing of an agreement, in violation of Section 12 of the Contract Law, as well as deceit and extortion pursuant to Sections 14 and 18 of the Contract Law. In addition, this conduct by Adv. Agassi violates the duty of acting fairly and in trust toward a client, pursuant to Section 2 of the Ethics Rules.

160. Misleading Corsica with respect to the Defendants' ability to provide it with professional service, including hiding the fact that they are not certified to provide such services, also constitutes lack of good faith in negotiating a contract.

H.4 Severe conflict of interest and unjust enrichment

161. eNitiatives's fee model, which is not stipulated on the quantity of time or effort, or the quality of the patents, but on the number of applications that "progress" according to the milestones, as well as M&B's conduct, which collected for each CIP application money as if it were an application drafted "from scratch," created a clear conflict of interest for the Defendants, between their interest, of as many applications as possible to be filed and accepted for registration with minimal effort on their part, thereby collecting maximum fees, and Cortica's interest as a client to receive protection that is as extensive and as long as possible in its patents, with as little financial expenses as possible.

162. Therefore, the Defendants filed dozens of patent applications when sometimes there was no real need for them, without Cortica's approval, and did not present Cortica with the possibility of filing a consolidated application or consolidating a significant part of the existing applications, thereby saving expenses, but preferred to increase its expenses for no logical reason but their desire for unjust enrichment at Cortica's expense.

163. This constitutes prohibited conflict of interest pursuant to Section 14(a) of the Ethics Rules regarding attorneys, and pursuant to Section 146 of the Patent Law, 5727-1967 (hereinafter: the **"Patent Law"**), with respect to patent agents.

164. In this context, the number of applications filed using the "copy-and-paste" method, with minimal effort, together with the "double" charge for the very same work ("copy-and-paste" work with minor additions as foregoing) – only reinforces the above conclusions and makes it more serious.

165. The Defendants' conduct described above, the double charges, number of applications, decisions in conflict of interest meant to benefit their accounts for no justifiable reason at Cortica's expense, and amateurish and negligent conduct, especially in light of the severe conflict of interest that the Defendants acted in, constitute unjust enrichment as this term is used in the Unjust Enrichment Law, 5739-1979 (hereinafter: the **"Unjust Enrichment Law"**).

H.5 Provision of legal services without any certification

166. At least until 2012, no person in eNitiatives was certified to provide legal services or advisement, whether general or in the field of patents, and the services provided to Cortica were in violation of the provisions of the Bar Association Law and the Patent Law. Even after the artificial "joining of forces" of eNitiatives and the HH law firm in 2011, Mr. Reuven Marko still provided Cortica with legal services without certification (to the best of our knowledge, Mr. Marko is not certified to provide such services even to the present day), and the only person certified to provide such services was Adv. Agassi.

167. Moreover, Mr. Ben-Shimon was also certified as a US Patent Agent only in 2012 (Annex 5 above), and therefore all of the services that he provided Cortica as part of the MW Law Firm were in violation of the American law on this matter. It is emphasized that Mr. Ben-Shimon was the one to provide the services in effect until his certification, even if he was not the one to "sign" on the applications and documents filed with the USPTO.

168. These facts explain the severe negligence described extensively above, since some of the base patents as well as many CIP applications on the basis of which the defendants "copied-and-pasted" over the years, as described above, were drafted when the Defendants were not certified as attorneys, patent agents or patent agents.

H.6 Prohibited sharing and/or distribution of profits between an attorney and a person other than an attorney

169. In addition, the fact that eNitiatives joined the HH law firm and the distribution of the fee between them (in cash to HH and in options to eNitiatives), as detailed in Chapter C.1 (II) above, constitutes prohibited distribution of profits according to the Ethics Rules and the Bar Association Law.

170. The present employment of Adv. Agassi, who is employed by eNitiatives which is not a partnership of attorneys or law firm, but an "ordinary" limited liability company, providing legal services for a consideration, is also against the Ethics Rules. In addition, or alternatively, since Adv. Agassi is a director in eNitiatives, and possible also receives a percentage of its profits, he is performing a prohibited sharing of profits with a person other than a lawyer, in violation of the Association Bar Law.

I. Remedies

171. Pursuant to the foregoing, the honorable Court is requested to order the Defendants, jointly and severally, to pay Cortica the following amounts:

171.1. **USD 2,000,000** - Restitution of the fees paid over the years to the Defendants in their various roles (payment to eNitiatives, whether directly or through the HH law firm, and payment to M&B, whether directly or through MW). As described in detail in this Statement of Counterclaim, it arises that the Defendants provided amateur and unprofessional service, were grossly negligent causing severe damages to Cortica, charged it double charges, "inflated" the fee they collected from Cortica by splitting into many applications, and worked in the "copy-and-paste" method. Such a service is a clear and fundamental breach of the agreement, for which Cortica claims that it be returned the fee that it paid;

171.2. **ILS 7,000,000** - Compensation for the damages caused to Cortica as the result of the gross negligence in filing the patent applications, including the filing of 114 CIP applications, and the amateur and negligent drafting of the applications, which impaired the scope and duration of the protection of the patents, and exposed them to reservations/cancellation proceedings/challenges after acceptance or as part of infringement proceedings;

171.3. **USD 2,000,000** - Compensation for the damages caused to Cortica due to the abandonment of Patent COR-088 without Cortica's approval. This amount constitutes the average of Cortica's valuation according to which the COR-088 patent is worth between USD 1,000,000 and USD 3,000,000;

171.4. **ILS 5,000,000** - Compensation for the damages caused to Cortica due to the devaluation of the patents as the result of the Defendants' failure to build the patent portfolio, thus making its commercialization difficult.

172. For the purposes of the court fee only, Cortica sets its overall claim against the Defendants at the amount of ILS 20,000,000.

J. The Court is authorized to hear the claim

173. The honorable Court is authorized to hear this claim, both due to the fact that the agreement applicable to the claim exclusively authorizes it, as provided in Section 53 of eNitiatives's own claim, and due of the fact that we are dealing with a Statement of Counterclaim to a claim filed with the honorable Court.

174. The honorable Court is authorized to hear the action also with respect to M&B, which is a US resident company, as detailed in the Motion to Permit Service Outside the Jurisdiction, filed simultaneously with this Statement of Claim.

175. Pursuant to all of the foregoing, the honorable Court is requested to grant this Claim and all its reasons and causes, and to order as requested in Chapter I above.

176. In addition, the honorable Court is requested to order the Defendants to pay Cortica's costs, including attorney fees.

Dr. Gilad Wekselman, Adv.	**Uriel Mozes, Adv.**	**Eddie Levdansky, Adv.**

Herzog, Fox, Neeman & Co., Advocates
Counsels for the Counter-Plaintiff

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15	The Option Allocation Agreement between Cortica and eNitiatives dated October 15, 2014.	113
16	Correspondence dated July 2, 2014, on transferring from the MW Firm to M&B.	122
17	A copy of the correspondence on the budget, as well as a plan at the amount of USD 236,000 dated February 16, 2017.	125
18	List of invoices, January 11, 2017 - March 22, 2017, and correspondence accompanying these details.	129
19	Updated budget proposal dated April 5, 2017, and correspondence accompanying it.	132
20	Budget proposal dated May 4, 2017, and our correspondence accompanying it.	137
21	Correspondence dated July 7, 2017.	156
22	Budget proposal dated July 12, 2017.	159
23	Correspondence on disagreements on payments in the period from January to March, 2018.	161
24	Reports for example from 2015, 2016.	172
25	The correspondence with Mr. Sommers on patent commercialization.	287
26	February 2018 Report.	290
27	Correspondence between Mr. Odinaev and Adv. Agassi on the February 2018 Report.	297
28	COR-179 (American patent application no. US20180018337A1).	300

נספח 1

נסח רשם החברות של קורטיקה.

Annex 1

The Registrar of Companies extract for Cortica

מידע על פרטי חברה, כולל שיעבודים פעילים ולא פעילים

פרטי חברה

מספר חברה: **513975250** סטאטוס משפטי: **פעילה** תאריך רישום: **09/05/2007**

שם חברה: **קורטיקה בע"מ**

שם חברה באנגלית: **CORTICA LTD**

סוג חברה: **ישראלית** סיווג חברה: **חברה פרטית** אחריות בעלי מניות: **מוגבלת**

כתובת התאגיד: **אלנבי 103 תל אביב - יפו** **מיקוד: 6513443**

עיקרי מטרות התאגיד: **לעסוק בסוגי עיסוק שפורטו בתקנון**

דוח שנתי אחרון הוגש לשנת: 2017 נרשם בתאריך: **13/06/2017**

הרכב הון

1. סוג מניה: **בכורה א** ערך נקוב: **0.01** מטבע: **שקל חדש**
   כמות מניות: **258,712** הון רשום: **2,587.12** הון מוקצה: **2,587.12**
2. סוג מניה: **בכורה ב** ערך נקוב: **0.01** מטבע: **שקל חדש**
   כמות מניות: **424,083** הון רשום: **4,240.83** הון מוקצה: **4,240.83**
3. סוג מניה: **בכורה ג** ערך נקוב: **0.01** מטבע: **שקל חדש**
   כמות מניות: **698,021** הון רשום: **6,980.21** הון מוקצה: **6,951.09**
4. סוג מניה: **רגילות** ערך נקוב: **0.01** מטבע: **שקל חדש**
   כמות מניות: **2,719,184** הון רשום: **27,191.84** הון מוקצה: **9,807.72**

בעלי מניות

1. שם: **NARECT LIMITED_** מס' זיהוי: **000453412**
   סוג זיהוי: **תאגיד זר** תאריך מינוי: **25/12/2011**

   מחזיק ב: 258,712 מניות מסוג בכורה א, בנות 0.01 שקל חדש, בהחזקה רגילה
2. שם: **MICHAL INTERNATIONAL _ INVESTMENTS LLC** מס' זיהוי: **043452440**
   סוג זיהוי: **תאגיד זר** תאריך מינוי: **26/05/2014**

   מחזיק ב: 17,135 מניות מסוג בכורה ב, בנות 0.01 שקל חדש, בהחזקה רגילה
3. שם: **ROWAN MARC** מס' זיהוי: **113098929**
   סוג זיהוי: **אזרח זר** תאריך מינוי: **17/06/2014**

   מחזיק ב: 13,639 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

4. שם: ANGULO ISLE OF MAN _ LIMITED PARTNERSHIP מס' זיהוי: 120491C
סוג זיהוי: **תאגיד זר** תאריך מינוי: **26/05/2014**

מחזיק ב: 50,849 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

5. שם: **זאבי אסף** מס' זיהוי: **13377791**
סוג זיהוי: **אזרח זר** תאריך מינוי: **14/10/2007**

מחזיק ב: 90,000 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

6. שם: **grandwin enterprises limited_** מס' זיהוי: **1406638**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 12,323 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

7. שם: **ich group ltd_** מס' זיהוי: **1440119**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 2,487 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

8. שם: QIFEI INTERNATIONAL _ DEVELOPMENT CO.LTD מס' זיהוי: **1523273**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **17/06/2014**

מחזיק ב: 137,381 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

9. שם: **grandbase resources limited_** מס' זיהוי: **1621888**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 6,215 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

10. שם: CONSTATINO _ INVESTMENTS LIMITED מס' זיהוי: **1663906**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **21/05/2014**

מחזיק ב: 244,169 מניות מסוג בכורה ב, בנות 0.01 שקל חדש, בהחזקה רגילה
45,399 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

11. שם: **right trend global limited_** מס' זיהוי: **1884469**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 124,347 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

12. שם: **craft visions limited_** מס' זיהוי: **1888474**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 123,229 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

13. שם: ICH GEMINI ASIA GROWTH _ FUND PTE LTD מס' זיהוי: 201523484K
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 24,874 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

14. שם: svic no.25 new technology _ investment l.l.p מס' זיהוי: **2148009510**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **02/07/2017**

מחזיק ב: 27,476 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

15. שם: **גליל עוזיה** מס' זיהוי: **2168524**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **02/07/2017**
כתובת: **קוסטה ריקה 2 חיפה**
מחזיק ב: 2,335 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

16. שם: MAIL COOPERATIEF U.A_ מס' זיהוי: **2225541**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **17/06/2014**

מחזיק ב: 30,310 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

17. שם: BERGGRUEN HOLDINGS _ LTD מס' זיהוי: **259579**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **17/06/2014**

מחזיק ב: 34,345 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

18. שם: CLIFTON CAPITAL LP_ מס' זיהוי: **2943610**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **02/07/2017**

מחזיק ב: 14,610 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

19. שם: **רייחלגאוז יגאל** מס' זיהוי: **304362270**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **02/07/2017**
כתובת: **הנדיב 11 הרצליה**
מחזיק ב: 263,131 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

20. שם: **אודנייב קרינה** מס' זיהוי: **311947436**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **02/07/2017**
כתובת: **החבצלת 16 נשר**
מחזיק ב: 263,131 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

21. שם: **הירש נירה** מס' זיהוי: **31359110**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **12/08/2014**
כתובת: **שדה יצחק 40 נהרייה מיקוד: 22309**
מחזיק ב: 20,424 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

22. שם: **roxy link limited_** מס' זיהוי: **39404**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 6,130 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

23. שם: **נחמיאס דן** מס' זיהוי: **40397408**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **17/06/2014**
כתובת: **האתרוג 13 סביון**
מחזיק ב: 3,031 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

24. שם: **אלון רות** מס' זיהוי: **50484567**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **02/07/2017**
כתובת: **גרינבוים יצחק 29 חיפה מיקוד: 3491011**
מחזיק ב: 1,825 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

25. שם: **STONE AARON** מס' זיהוי: **505425242**
סוג זיהוי: **אזרח זר** תאריך מינוי: **17/06/2014**

מחזיק ב: 13,639 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

26. שם: **מוסד הטכניון למחקר ופתוח בעמ** מס' זיהוי: **510097918**
סוג זיהוי: **חברה** תאריך מינוי: **14/10/2007**
כתובת: **שד שיקגו 0 חיפה מיקוד: 3200000**
מחזיק ב: 32,400 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

27. שם: **אי.בי.אי. ניהול נאמנויות** מס' זיהוי: **515020428**
סוג זיהוי: **חברה** תאריך מינוי: **22/02/2018**
כתובת: **אחד העם 9 תל אביב - יפו מיקוד: 6525101**
מחזיק ב: 41,731 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה
5,000 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה בנאמנות

28. שם: **זימרן צבי** מס' זיהוי: **51818003**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **06/02/2008**
כתובת: **זכרון יעקב**
מחזיק ב: 1,747 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

29. שם: **גולדברג אבי** מס' זיהוי: **56468085**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **06/02/2008**
כתובת: **סמטת אהרון 3 חיפה**
מחזיק ב: 1,748 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

30. שם: **art99 foundation llc_** מס' זיהוי: **5734711**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 6,141 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

31. שם: **אבי אומסי** מס' זיהוי: **57819385**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **06/02/2008**
כתובת: **הכובשים 92 זכרון יעקב**
מחזיק ב: 1,747 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

32. שם: **זאבי יהושע** מס' זיהוי: **6120372**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **14/10/2007**
כתובת: **גבעת דאונס 36 חיפה**
מחזיק ב: 180,000 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

33. שם: **ליכטר אליהו** מס' זיהוי: **6179824**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **06/02/2008**
כתובת: **הרצל 76 חיפה**
מחזיק ב: 1,747 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

34. שם: **בונן רמי** מס' זיהוי: **6379515**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **25/12/2011**
כתובת: **המעפילים 52 נהרייה**
מחזיק ב: 13,379 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

35. שם: **PUCCINI WORLD LIMITED_** מס' זיהוי: **681244**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **26/05/2014**
מחזיק ב: 162,779 מניות מסוג בכורה ב, בנות 0.01 שקל חדש, בהחזקה רגילה
30,266 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

36. שם: **san jeremy** מס' זיהוי: **720084759**
סוג זיהוי: **אזרח זר** תאריך מינוי: **03/07/2017**
מחזיק ב: 3,668 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

37. שם: **AMRAM FILIP** מס' זיהוי: **9741222**
סוג זיהוי: **אזרח זר** תאריך מינוי: **28/03/2018**
כתובת: **איטליה**
מחזיק ב: 12,574 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה
13,738 מניות מסוג רגילות, בנות 0.01 שקל חדש, בהחזקה רגילה

38. שם: **BREW PR EQ LLC_** מס' זיהוי: **A183812**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **17/06/2014**
מחזיק ב: 1,869 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

39. שם: **OLIVER HAARMANN_** מס' זיהוי: **C4YMYJ997**
סוג זיהוי: **תאגיד זר** תאריך מינוי: **17/06/2014**
מחזיק ב: 10,103 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

40. שם: **dionisius julianto awy** מס' זיהוי: **E4278084E**
סוג זיהוי: **אזרח זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 3,169 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

41. שם: **kumar vindon** מס' זיהוי: **E4637697F**
סוג זיהוי: **אזרח זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 2,492 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

42. שם: **wong oi chi** מס' זיהוי: **K03965683**
סוג זיהוי: **אזרח זר** תאריך מינוי: **03/07/2017**

מחזיק ב: 1,232 מניות מסוג בכורה ג, בנות 0.01 שקל חדש, בהחזקה רגילה

דירקטורים

1. שם: **רייחלגאוז יגאל** מס' זיהוי: **304362270**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **09/05/2007**
כתובת: **הנדיב 11 הרצליה**

2. שם: **אודנייב קרינה** מס' זיהוי: **311947436**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **09/05/2007**
כתובת: **החבצלת 16 נשר**

3. שם: **זאבי יהושע** מס' זיהוי: **6120372**
סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **12/05/2008**
כתובת: **גבעת דאונס 36 חיפה**

אין לתאגיד חובות פעילים לתשלום אגרה שנתית

שעבודים פעילים

בשעבודים שנרשמו לפני 12/11/2017 - למצב עדכני, יש לקרוא את תיאור הבטוחה יחד עם רשימת השינויים לשעבוד.
בשעבודים שנרשמו אחרי 12/11/2017 - תיאור הבטוחה משקף את מצב הבטוחה העדכני וכולל את השינויים המאוחרים ליום רישום הבטוחה. רשימת שינויים לשעבוד מציינת את תאריכי עדכון השינויים ואת סוג השינויים שבוצעו.

מס' שעבוד: 4 תאריך רישום: **06/07/2016** תאריך יצירה: **30/06/2016**

פרטים כלליים לשעבוד

תאריך רישום: **06/07/2016** מהות השעבוד: **אגרת חוב**
דרגת השעבוד: **--** הסכום המובטח: **800000.00 דולר ארה"ב**

איסור שעבוד או העברת נכסים ללא הסכמת בעל השעבוד

הנכסים המשועבדים

תאריך רישום: **06/07/2016** סוג הנכס: **כספים**

תיאור הנכס: שעבוד קבוע בדרגה ראשונה על פקדון כספי הקיים בבנה"פ סניף537 בח-ן 554475 ע"ס 800000אלף דולר מס' עסקה 354782417 לרבות פירותיו
תנאים מיוחדים: אין לשעבד או להעביר ללא הסכמת בעל השיעבוד

מלווה/נאמן

תאריך רישום: **06/07/2016** מס' בנק/תאגיד: **520000118**

שם המלווה/נאמן: **בנק הפועלים בע"מ**

מס' שעבוד: 7

תאריך רישום: **18/01/2018** תאריך יצירה: **02/01/2018**

פרטים כלליים לשעבוד

תאריך רישום: **18/01/2018** מהות השעבוד: **שיעבוד צף/ספציפי**

דרגת השעבוד: **דרגה ראשונה** הסכום המובטח: **198403.00 שקל חדש**

איסור שעבוד או העברת נכסים ללא הסכמת בעל השעבוד

הנכסים המשועבדים

תאריך רישום: **18/01/2018** סוג הנכס: **אחר**

תיאור הנכס: שעבוד קבוע בדרגה ראשונה על פיקדון מט"ח מס' 354921412 בסך 59000 דולר ללא הגבלה בסכום הקיים בבנה"פ בסניף יהלום 537 בחשבון 554475 עסקה 354921412 לרבות פירותיו

מלווה/נאמן

תאריך רישום: **18/01/2018** מס' בנק/תאגיד: **12-537**

שם המלווה/נאמן: **בנק הפועלים בע"מ, יהלום**

שעבודים לא פעילים

מס' שעבוד: 1 תאריך רישום: **31/03/2015** תאריך יצירה: **26/03/2015** תאריך סילוק: **08/01/2018**
מהות השעבוד: **אגרת חוב** הסכום המובטח: **160000.00 דולר ארה"ב**

מס' שעבוד: 2 תאריך רישום: **03/09/2015** תאריך יצירה: **30/08/2015** תאריך סילוק: **08/01/2018**
מהות השעבוד: **אגרת חוב**

מס' שעבוד: 3 תאריך רישום: **03/09/2015** תאריך יצירה: **30/08/2015** תאריך סילוק: **08/01/2018**
מהות השעבוד: **אגרת חוב** הסכום המובטח: **300000.00 דולר ארה"ב**

מס' שעבוד: 5 תאריך רישום: **14/12/2016** תאריך יצירה: **12/12/2016** תאריך סילוק: **06/01/2019**
מהות השעבוד: **אגרת חוב** הסכום המובטח: **158457.00 שקל חדש**

מס' שעבוד: 6 תאריך רישום: **14/12/2016** תאריך יצירה: **12/12/2016** תאריך סילוק: **23/05/2018**
מהות השעבוד: **אגרת חוב** הסכום המובטח: **60000.00 דולר ארה"ב**

שינויים בחברה

שינוי בתקנון

1.	תאריך רישום: **18/09/2007**	תאריך החלטה: **13/05/2007**
2.	תאריך רישום: **26/03/2008**	תאריך החלטה: **19/08/2007**
3.	תאריך רישום: **16/06/2008**	תאריך החלטה: **12/05/2008**
4.	תאריך רישום: **26/12/2011**	תאריך החלטה: **10/08/2011**
5.	תאריך רישום: **08/06/2014**	תאריך החלטה: **16/02/2014**
6.	תאריך רישום: **27/08/2014**	תאריך החלטה: **17/06/2014**
7.	תאריך רישום: **22/02/2017**	תאריך החלטה: **08/12/2016**

אין שינויי סטאטוס

תמצית זו הוכנה מתוך המידע האגור במחשב רישום החברות ביום 05/05/2019 בשעה 12:00

נסח החברה או השותפות מהווה תמצית מידע ממאגר הנתונים הממוחשב של רשות התאגידים, הניתן כשירות לציבור, על פי מידע שהתקבל ברשות. המידע בנסח עלול להיות חסר, בלתי מדויק או בלתי מעודכן. אין להסתמך על הנתונים בנסח, משאינו מהווה אחד מהמרשמים שמנהלת רשות התאגידים על פי דין.
לבירור המידע והדיווחים שהוגשו לרשם החברות או לרשם השותפויות כנדרש בחוק, יש לעיין בתיק התאגיד. יודגש כי המידע המצוי בתיק החברה ביחס לבעלי מניות ודירקטורים בחברה, כמו גם פרטי מידע נוספים, הינו בעל אופי דקלרטיבי בלבד ואינו מהווה תחליף לעיון במרשם בעלי המניות ובמרשם הדירקטורים שמנהלת החברה, הפתוחים לעיון הציבור במשרדה הרשום.
הנסח עשוי לכלול גם תמצית מידע שהתקבל מרשויות המדינה, כדוגמת רשות האכיפה והגבייה, הכונס הרשמי ומערכת בתי המשפט, הניתן אף הוא כשרות לציבור. המידע עשוי להיות חלקי או לא מעודכן, אין להסתמך עליו ויש לפנות ולעיין במידע אצל רשות המדינה המוסמכת.

רשות התאגידים
Israeli Corporations Authority

4

COMPANY INFORMATION, INCLUDING ACTIVE AND INACTIVE PLEDGES

COMPANY DETAILS

Co. No: **513975250** Legal Status: **Active** Registration Date: **09/05/2007**
Co. Name: **Cortica Ltd.** [*Hebrew*]
Co. Name in English: **Cortica Ltd.**
Company Type: **Israeli** Company classification: **Private Company** Shareholder liability: **limited**
Corporate address: **103 Allenby St., Tel Aviv – Yafo** **Post-code: 6513433**
Principal Corporate Objectives: **To engage in the fields of operations listed in the articles of association**
Last Annual Report Submitted: 2017 Registration Date: **13/06/2017**

SHARE CAPITAL DIVISION

1.	Share Class: **Preferred A** No. of Shares: **258,712**	Par Value: **0.01** Registered Share Capital: **2,587.12**	Currency: **ILS** Issued Share Capital: **2,587.12**
2.	Share Class: **Preferred B** No. of Shares: **424,083**	Par Value: **0.01** Registered Share Capital: **4,240.83**	Currency: **ILS** Issued Share Capital: **4,240.83**
3.	Share Class: **Preferred C** No. of Shares: **698,021**	Par Value: **0.01** Registered Share Capital: **6,980.21**	Currency: **ILS** Issued Share Capital: **6,951.09**
4.	Share Class: **Ordinary** No. of Shares: **2,719,184**	Par Value: **0.01** Registered Share Capital: **27,191.84**	Currency: **ILS** Issued Share Capital: **9,807.72**

SHAREHOLDERS

1. Name: **Narect Limited** ID no.: **000453412**
   ID Type: **Foreign corporation** Appointment Date: **25-Dec-2011**

   Holding: 258,712 Preferred A Shares bearing a par value of ILS 0.01, through ordinary holding
2. Name: **Michal International Investments LLC** ID no.: **043452440**
   ID Type: **Foreign corporation** Appointment Date: **26-May-2014**

   Holding: 17,135 Preferred B Shares bearing a par value of ILS 0.01, through ordinary holding
3. Name: **Rowan Marc** ID no.: **113098929**
   ID Type: **Foreign citizen** Appointment Date: **17-Jun-2014**

   Holding: 13,639 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
4. Name: **Angulo Isle of Man Limited Partnership** ID no.: **120491C**
   ID Type: **Foreign corporation** Appointment Date: **26-May-2014**

   Holding: 50,849 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
5. Name: **Joseph Zeevi** ID no.: **13377791**
   ID Type: **Foreign citizen** Appointment Date: **14-Oct-2007**

   Holding: 90,000 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
6. Name: **Grandwin Enterprises Limited** ID no.: **1406638**

ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017**

Holding: 12,323 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

7. Name: **ICH Group Ltd.** ID no.: **1440119**
ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017**

Holding: 2,487 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

8. Name: **QIFEI International Development Co. Ltd.** ID no.: **1523273**
ID Type: **Foreign corporation** Appointment Date: **17-Jun-2017**

Holding: 137,381 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

9. Name: **Grandbase Resources Limited** ID no.: **1621888**
ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017**

Holding: 6,215 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

10. Name: **Constatino Investments Limited** ID no.: **1663906**
ID Type: **Foreign corporation** Appointment Date: **21-May-2014**

Holding: 244,169 Preferred B Shares bearing a par value of ILS 0.01, through ordinary holding
45,399 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

11. Name: **Right Trend Global Limited** ID no.: **1884469**
ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017**

Holding: 24,874 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

12. Name: **Craft Visions Limited** ID no.: **1888474**
ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017**

Holding: 123,229 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

13. Name: **ICH Gemini Asia Growth Fund PTE Ltd.** ID no.: **201523484K**
ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017**

Holding: 24,874 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

14. Name: **SVIC No.25 New Technology Investment LLP** ID no.: **2148009510**
ID Type: **Foreign corporation** Appointment Date: **2-Jul-2017**

Holding: 27,476 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

15. Name: **Galil Uziah** ID no.: **2168524**
ID Type: **Israeli citizen** Appointment Date: **2-Jul-2017**
Address: **2 Costa Rica, Haifa**
Holding: 2,335 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

16. Name: **Mail Cooperatief U.A.** ID no.: **2225541**
ID Type: **Foreign corporation** Appointment Date: **17-Jun-2014**

Holding: 30,310 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

17. Name: **Berggruen Holdings Ltd.** ID no.: **259579**
ID Type: **Foreign corporation** Appointment Date: **17-Jun-2014**

Holding: 34,345 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

18. Name: **Clifton Capital LP** ID no.: **2943610**
ID Type: **Foreign corporation** Appointment Date: **2-Jul-2017**

	Holding: 14,610 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
19.	Name: **Igal Raichelgauz** ID no.: **304362270** ID Type: **Israeli citizen** Appointment Date: **2-Jul-2017** Address: **11 Hanadiv St., Herzliya** Holding: 263,131 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
20.	Name: **Karina Odinaev** ID no.: **311947436** ID Type: **Israeli citizen** Appointment Date: **2-Jul-2017** Address: **16 Hahavazelet, Nesher** Holding: 20,424 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
21.	Name: **Nira Hirsch** ID no.: **31359110** ID Type: **Israeli citizen** Appointment Date: **12-Aug-2014** Address: **40 Itzhak Sadeh, Nahariah Post-code: 22309** Holding: 3,414,130 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
22.	Name: **Roxy Link Limited** ID no.: **39404** ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017** Holding: 6,130 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
23.	Name: **Dan Nahmias** ID no.: **40397408** ID Type: **Israeli citizen** Appointment Date: **17-Jun-2014** Address: **13 Haetrog St., Savion** Holding: 3,031 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
24.	Name: **Alon Ruth** ID no.: **50484567** ID Type: **Israeli citizen** Appointment Date: **2-Jul-2017** Address: **29 Izhak Greenboim, Haifa, Post-code: 3491011** Holding: 1,825 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
25.	Name: **Stone Aaron** ID no.: **505425242** ID Type: **Foreign citizen** Appointment Date: **17-Jun-2017** Holding: 13,639 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
26.	Name: **Technion Institute for R&D Ltd.** ID no.: **210097918** ID Type: **Company** Appointment Date: **14-Oct-2007** Address: **0 Chicago Blvd, Haifa Post Code: 3200000** Holding: 32,400 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
27.	Name: **IBI Trust Management Ltd.** ID no.: **515020428** ID Type: **Company** Appointment Date: **22-Feb-2018** Address: **27 Ahad Ha'am, Tel Aviv – Yafo, Post Code: 6525101** Holding: 41,731 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding 5,000 Ordinary Shares bearing a par value of ILS 0.01, on trust
28.	Name: **Zimran Zvi** ID no.: **51818003** ID Type: **Israeli citizen** Appointment Date: **6-Feb-2008** Address: **Zichron Yaakov** Holding: 1,747 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
29.	Name: **Goldberg Avi** ID no.: **56468085** ID Type: **Israeli citizen** Appointment Date: **6-Feb-2008** Address: **3 Simtat Aharon, Haifa** Holding: 1,748 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
30.	Name: **Art99 Foundation LLC** ID no.: **5734711** ID Type: **Foreign corporation** Appointment Date: **3-Jul-2017** Holding: 6,141 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
31.	Name: **Avi Omsy** ID no.: **57819385**

	ID Type: **Israeli citizen** Appointment Date: **6-Feb-2008** Address: **92 Hakovshim St., Zichron Yaakov** Holding: 1,747 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
32.	Name: **Zeevi Yehoshua** ID no.: **6120372** ID Type: **Israeli citizen** Appointment Date: **14-Oct-2007** Address: **36 Givat Downs St. Haifa** Holding: 180,000 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
33.	Name: **Lichter Eliahu** ID no.: **6179824** ID Type: **Israeli citizen** Appointment Date: **6-Feb-2008** Address: **76 Herzl, Haifa** Holding: 1,747 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
34.	Name: **Bunen Rami** ID no.: **6379515** ID Type: **Israeli citizen** Appointment Date: **25-Dec-2011** Address: **52 Hamaaplim, Nahariah** Holding: 13,379 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
35.	Name: **Puccini World Limited** ID no.: **681244** ID Type: **Foreign corporation** Appointment Date: **26-May-2014** Holding: 162,779 Preferred B Shares bearing a par value of ILS 0.01, through ordinary holding 30,266 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
36.	Name: **San Jeremy** ID no.: **720084759** ID Type: **Foreign Citizen** Appointment Date: **3-Jul-2017** Holding: 3,668 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
37.	Name: **Amram Filip** ID no.: **9741222** ID Type: **Foreign Citizen** Appointment Date: **28-Mar-2018** Address: **Italy** Holding: 12,574 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding 13,738 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding
38.	Name: **Brew PR EQ LLC** ID no.: **A183812** ID Type: **Foreign corporation** Appointment Date: **17-Jun-2014** Holding: 1,869 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
39.	Name: **Oliver Haarmann** ID no.: **C4YMYJ997** ID Type: **Foreign corporation** Appointment Date: **17-Jun-2014** Holding: 10,103 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
40.	Name: **Dionisues Julianto Awy** ID no.: **E4278084E** ID Type: **Foreign Citizen** Appointment Date: **3-Jul-2017** Holding: 3,169 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
41.	Name: **Kumar Vindon** ID no.: **E4637697F** ID Type: **Foreign Citizen** Appointment Date: **3-Jul-2017** Holding: 2,492 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding
42.	Name: **Wong Oi Chi** ID no.: **K03965683** ID Type: **Foreign Citizen** Appointment Date: **3-Jul-2017** Holding: 1,232 Preferred C Shares bearing a par value of ILS 0.01, through ordinary holding

רשות התאגידים
Israeli Corporations Authority

DIRECTORS

1.	Name: **Igal Raichelgauz** ID no.: **304362270** ID Type: **Israeli citizen** Appointment Date: **2-Jul-2017** Address: **11 Hanadiv St., Herzliya**
2.	Name: **Karina Odinaev** ID no.: **311947436** ID Type: **Israeli citizen** Appointment Date: **2-Jul-2017** Address: **16 Hahavazelet, Nesher**
3.	Name: **Zeevi Yehoshua** ID no.: **6120372** ID Type: **Israeli citizen** Appointment Date: **14-Oct-2007** Address: **36 Givat Downs St. Haifa**

*** NO ANNUAL FEE DEBT TO THE COMPANIES REGISTRAR ***

ACTIVE PLEDGES

For pledges registered prior to 12-Nov-2017 – for the current status, the description of the collateral should be read jointly with the list of changes to the pledges.
For pledges registered after 12-Nov-2017 – the description of the collateral reflects its current status and includes changes made after registration of such collateral. The list of changes to the pledge indicates the dates of updating the changes and the types of changes made.

PLEDGE NO.: 4 REG. DATE: **6-Jul-2016** CREATION DATE: **30-Jun-2016**

GENERAL DETAILS OF THE PLEDGE

REG. DATE: **6-Jul-2016** TYPE OF PLEDGE: **LOAN DEED**
RANK OF PLEDGE: -- SECURED AMOUNT: **USD 800,000.00**
There is a restriction on making a pledge or transfer of assets without the consent of the holder of the pledge

PLEDGED ASSETS

REG. DATE: **6-Jul-2016** ASSET CLASS: **Money**
ASSET DESCRIPTION: A fixed, first-ranked pledge over existing cash held with Bank Hapoalim, Branch 537, account 554475 of an amount of USD 800,000 thousand [***sic***] transaction number 354782417 including interest.
Special terms: Not to pledge or transfer without the consent of the holder of the pledge

TRUSTEE/LENDER

REG. DATE: **6-Jul-2016** Bank/corp. No. **520000118**
Name of Trustee/Lender: **Bank Hapoalim Ltd.**

PLEDGE NO.: 7 REG. DATE: **18-Jan-2018** CREATION DATE: **2-Jan-2018**

GENERAL DETAILS OF THE PLEDGE

REG. DATE: **18-Jan-2018** TYPE OF PLEDGE: **Floating/specific Pledge**
RANK OF PLEDGE: **first-rank** SECURED AMOUNT: **ILS 198403.00**
There is a restriction on making a pledge or transfer of assets without the consent of the holder of the pledge

PLEDGED ASSETS

REG. DATE: **18-Jan-2018** ASSET CLASS: **OTHER**
ASSET DESCRIPTION: A fixed, first-ranked pledge over a foreign currency deposit number 354921412 totaling USD 59,000 with no limitation on amount over

the existing amount held with Bank Hapoalim, Branch Yahalom 537, account 554475 transaction number 354921412 including interest.

TRUSTEE/LENDER
REG. DATE: **18-Jan-2018** Bank/corp. No. **12-537**
Name of Trustee/Lender: **Bank Hapoalim Ltd., Yahalom**

INACTIVE PLEDGES

Pledge no: 1 Reg. Date: **31-Mar-2015** Creation date: **26-Mar-2015** Clearance date: **8-Jan-2018**
Nature of pledge: **loan deed** secured amount: **USD 160000.00**

Pledge no: 2 Reg. Date: **3-Sep-2015** Creation date: **30-Aug-2015** Clearance date: **8-Jan-2018**
Nature of pledge: **loan deed**

Pledge no: 3 Reg. Date: **3-Sep-2015** Creation date: **30-Aug-2015** Clearance date: **8-Jan-2018**
Nature of pledge: **loan deed** secured amount: **USD 300000.00**

Pledge no: 5 Reg. Date: **14-Dec-2016** Creation date: **12-Dec-2016** Clearance date: **6-Jan-2019**
Nature of pledge: **loan deed** secured amount: **USD 158457.00**

Pledge no: 6 Reg. Date: **14-Dec-2016** Creation date: **12-Dec-2016** Clearance date: **23-May-2018**
Nature of pledge: **loan deed** secured amount: **USD 60000.00**

CHANGES TO THE COMPANY

Change in Articles of Association

1. REG. DATE: **18-Sep-2007** RESOLUTION DATE: **13-May-2007**
2. REG. DATE: **26-Mar-2008** RESOLUTION DATE: **19-Aug-2007**
3. REG. DATE: **16-Jun-2008** RESOLUTION DATE: **12-May-2008**
4. REG. DATE: **26-Dec-2011** RESOLUTION DATE: **10-Aug-2011**
5. REG. DATE: **8-Jun-2014** RESOLUTION DATE: **16-Feb-2014**
6. REG. DATE: **17-Aug-2014** RESOLUTION DATE: **17-Jun-2014**
7. REG. DATE: **22-Feb-2017** RESOLUTION DATE: **8-Dec-2016**

* NO CHANGE IN STATUS *

This extract was prepared on the basis of information stored on the Registrar of Companies' computers on: 5-May-2019 time: 12:00

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To review the information and reports submitted to the Registrar of Companies or Registrar of Partnerships as required by law, the corporation's file ought to be reviewed. It should be emphasized that the information included in the company file with respect to company shareholders and directors as well as additional details are only of a declarative nature and does not serve as a substitute for the information maintained in the company's own registries maintained in the company's registered offices that are open to the public.
The extract may also include a summary of information received from other state authorities, for example the Enforcement and Collection Authority, the Official Receiver and the Court System, which is also provided as a public service. The information may be incomplete or outdated, it should not be relied upon and the authorized state authority should be contacted and the information held by them should be reviewed.

רשות התאגידים
Israeli Corporations Authority

נספח 2

רקע אודות קורטיקה מתוך ויקיפדיה וכן מספר כתבות המתארות את פעילותה.

Annex 2

Background on Cortica, from Wikipedia and several articles describing its activities.

Cortica

Headquartered in Tel Aviv[1] with R&D and executive offices in Israel and New York City,[2] **Cortica** utilizes unsupervised learning methods to recognize and analyze digital images and video.[3][4] The technology developed by the Cortica team is based on research of the function of the human brain.[5][6]

Cortica In Every Image

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External links

Company Founding

Cortica was founded in 2007 by Igal Raichelgauz, Karina Odinaev and Yehoshua Zeevi.[7] Together, the founders developed the company's core technology while at Technion – Israel Institute of Technology. By combining discoveries in neuroscience with developments in computer programming, the team created technology that possesses the ability to interpret large amounts of visual data with increased accuracy.[8] This technology, called Image2Text, is based on the founders' work in digitally replicating cortical neural networks' ability to identify complex patterns within massive quantities of ambiguous and noisy data.[9]

Cortica's offerings have application in the automotive industry[10], media industries[11], as well as the smart city and medical industries[12]. Industry experts suggest that the self-driving automotive industry alone will be worth upwards of $7 trillion[13] while each connected car is expected to generate 4,000 GB of data per day[14]. Beyond that, industry analysts expect the proliferation of surveillance cameras to continue leading to an expected 2,500 Petabytes of data being generated daily by new surveillance cameras[15]. Cortica operates in these high scale industries[16].

The company currently employs professionals from many domains including AI researchers as well as veterans of intelligence units within the Israeli Defense Forces[17].

Research and Technology

In 2006, Founders Raichelgauz, Odinaev, and Zeevi shared their findings with the 28th IEEE EMBS Annual International Conference in New York in a paper titled, "Natural Signal Classification by Neural Cliques and Phase-Locked Attractors".[18]

That same year, the team also published "Cliques in Neural Ensembles as Perception Carriers"[19]

CB Insights recently identified Cortica as the number one patent holder among AI companies[20].

Cortica is researching to develop a machine-learning driving system which can identify objects and pedestrians. Connecting to it, Elon Musk has been rumored to partner with Cortica for his electric car company, Tesla[21]. However, Tesla denies it stating that Musk did not discuss a collaboration with artificial intelligence firm Cortica.[22]

Funding

Cortica raised $7 million in its Series A funding round, announced in August 2012. Investors included Horizons Ventures (the investment firm of Hong Kong billionaire Li Ka-Shing), and Ynon Kreiz, the former chairman and CEO of the Endemol Group.[23][24]

In May 2013, it was announced that Cortica had raised $1.5 million from Russian firm Mail.ru Group.[25][26] It later transpired that this was a part of Cortica's Series B funding round for $6.4 million, announced in June 2013. The round was led by Horizons Ventures, with participation from the Russian firm Mail.ru Group and other angel investors.[27][28] In its fourth funding round, Cortica has raised $20 million, bringing the total investments to $38 million.[29] According to a report from The Israeli lead Daily economic newspaper, TheMarker, the fourth round was led by a strategic Chinese investor who will probably help the company expand into the Asian market.[30]

A fifth investment round was closed in December, 2016 for an additional $30 million from undisclosed investors[31].

Media coverage

GigaOm listed Cortica as one of the top deep learning startups in a November 2013 article surveying the field, along with AlchemyAPI, Ersatz, and Semantria.[32]

Business Insider ranked Cortica as one of the coolest tech companies in Israel[33].

CB Insights has identified Cortica as the top patent holding AI company[34].

In 2017 several leading automotive media outlets covered the launch of Cortica's automotive business unit [35][36][37][38][39]

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External links

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עכשיו ההזדמנות שלך להצטרף למהפכה הפיננסית הצומחת ביותר!

עמוד הבית

"הגביע הקדוש": האם קורטיקה תהיה מובילאיי הבאה?

קורטיקה הישראלית נעזרת בבינה מלאכותית כדי לסייע לכלי רכב להתמודד עם הכאוס האורבני ■ החברה גייסה כ-70 מיליון דולר, בין השאר מהמיליארדר לי קה שינג

דובי בן גדליהו 05/12/2017, 09:54

א+ א-

יגאל רייחלגאוז וקרינה אודינייב / צילום: לירן שטרית

לפני מספר ימים נקלעתי לכיכר בלב המושבה הגרמנית בחיפה. הכיכר, אותה מכנים המקומיים "המטחנה", ממגזת ארבעה כיווני תנועה שבכל אחד מהם שני נתיבים. בקצה אחד שלה נמצא רמזור, בשוליה מעברי חצייה ובתווך עוברת "המטרונית" המפורסמת. באזור הדמדומים האורבני הזה אין קיום למושג "זכות קדימה" ובאותו יום נוסף גם טוויסט לעלילה בדמות פסולת על אחד הנתיבים, שגרמה לנהגים לזגזג תוך כדי הקפה. בקיצור, גיהינום תחבורתי טיפוסי.

כדי לחצות את הכיכר נדרשים הנהגים לאמץ מדיניות נהיגה מאוד ספציפית, שאינה מיועדת לרכי לב: צריך להסתכל בו זמנית לשלושה כיוונים, ליצור קשר עין עם הנהגים החוצים כדי להעריך את נחישותם/שפיותם, לחזות את תזמון הרמזור, להתעלם מהצפירות הבלתי פוסקות ולצלול פנימה בידיעה, שבכל רגע נתון תיאלצו לבלום, להאיץ או לטפס על אי התנועה במרכז. עכשיו דמיינו את עצמכם יושבים ברכב

מלח ופלפל שיווק באינטרנט
התיבול המדויק לתמהיל שיווקי מוטעם
גלוש לאתר

לא כחלון: זה האיש שבאמת ישפיע על הכלכלה בממשלה הבאה
עמוד הבית

הרוג מפגיעת רקטה באשקלון; נתניהו: נמשיך בתקיפות מסיביות
עמוד הבית

משקיע שהימר על רכישת משרדים: "הנכס בשביל הפנסיה שלי"
עמוד הבית

כיצד יכולים עסקים קטנים לבטח אשראי?
תוכן מקודם

מלחמת שלום האירוויזיון של בנימין נתניהו
NEWS ווואלה

"תן ביס" וצרות אחרות - ההאהבות של הציבור

הנקראות ביותר

כאשר מנסים לתרגם את "מבט על" הנהיגה" האינטואיטיבית, שבה עובדים באמצעות ניסיון אנושי, לשפת האלגוריתמים והתכנות שבה מתוכנת הרכב האוטונומי "רואה" ו"חושב", נתקלים במחסום טכנולוגי. מהנדסי הרכב האוטונומי ומפתחי החיישנים והרכיבים המחוכמים כבר יודעים איך לזהות כלי רכב, הולכי רגל, תמרורים ומכשולי כביש בתנאי ראות שונים. אבל מיזוג נתונים מעשרות חיישנים כדי לחזות את התנועה דורש לעבד כמות מסיבית של מידע חזותי בזמן אמת. על פי הערכות, כל רכב אוטונומי ייצר 4000 גיגהבייט של מידע חזותי ביום טיפוסי.

הפתרון שאותו מאמצת כיום תעשיית הרכב הוא שימוש בראיית מכונה ואינטליגנציה מלאכותית (AI) כדי לנסות להקנות לחיישנים ולמעבדי נתונים ברכב יכולות דומות לאלה של הראייה האנושית - משלב הקליטה של זרם מסיבי של מידע ועד סינונו, עיבודו ותרגומו לפעילות. כבר היום הטכנולוגיה הזו מרכזת סביבה שוק של מיליארדי דולרים בשנה עם עשרות סטארט-אפים והיא משנה כיום את דרכי העבודה בעולם הביון, הרפואה, השיווק ועוד. אלא שהרכב האוטונומי מציב בפניה אתגר רציני בשל האינטראקציות המורכבות על הכביש ובשל הצורך ב"מדיניות נהיגה" שהוזכרה לעיל.

קיראו עוד ב"גלובס"

- מה עובר על קסטרו? דיווח: עובדים מבולבלים ותוצאות חלשות
- משקיע שהימר על רכישת משרדים: "הנכס בשביל הפנסיה שלי"
- הרוג מפגיעת רקטה באשקלון; נתניהו: נמשיך בתקיפות מסיביות
- איך יכולים עסקים קטנים ובינוניים להתמודד עם מחסור באשראי?
  מקודם

הגישה הרווחת כיום לתכנון מערכות AI לרכב אוטונומי היא "לימוד תחת השגחה". אם אתה רוצה שהמערכת שלך תדע לזהות עצמאית תמרור או סימן על הכביש, אתה צריך להזין לתוכה כמות גדולה מאוד של דוגמאות מקוטלגות של אותו תמרור תחת תנאי תאורה ואקלים שונים ואז היא תתריע עליהם באמצעות צפצוף (במערכות פאסיביות) או תגיב להן עם בלימה עצמאית, למשל.

אבל השיטה הזו דורשת הרבה זמן ומשאבי "לימוד" והיא רחוקה מלהיות מושלמת. יכולת הזיהוי וההסתגלות שלה טובה כמו המידע שהוזן לתוכה בעת הלמידה והתוצאה עלולה להיות התרעות שווא או כשל בזיהוי. כאשר מדובר ברמזור, תמרור או רכב מלפנים, דיוק ב-99% מהמקרים פשוט אינו

וואלה NEWS לאתר וואלה!

- ואז, בשידור חי, נמאס לברק רביד
- הסיפורים מאחורי הפרישה של יוסי בניון
- תנו לקלוריות לדבר: המנה שתציל כל דיאטה

מה עובר על קסטרו? דיווח: עובדים מבולבלים ותוצאות חלשות
נתח שוק וצרכנות

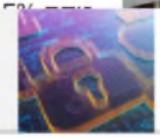
כיל מציגה: להפסיד 300 מיליון דולר ובכל זאת לנצח
שוק ההון

האם ישראל באמת ערוכה להעלאת גיל הפרישה לנשים
בארץ

"אם יש חשדות, צריך לחקור ולבדוק, אבל התחושה היא של יד
וידאו

מהי עסקת קומבינציה ואילו יתרונות יש בה?
תוכן מקודם

ירוק בת"א; ביטוח פלוס מזנק 2%, כלל ביטוח



הנקראות ביותר

התהליך "מלמטה למעלה", כלומר באמצעות [illegible] שנאספים על הכביש ולא "מלמעלה למטה", כלומר באמצעות מתוכנתות מראש.

זה נחשב "הגביע הקדוש" שלשמו ה-AI בכללותו וייתכן בהחלט, שהחיפוש אחריו יוביל את תעשיית הרכב דווקא לחברת קורטיקה הישראלית, שפיתחה טכנולוגיית אינטליגנציה מלאכותית עם יכולת לימוד עצמי.

רוצה להשאר מעודכן/ת בנושא הסיפורים הגדולים של השבוע?

דוא"ל

הרשמה

נושאים נוספים בהם תוכל/י להתעדכן

יעד שאפתני, טכנולוגיה מוכחת

קורטיקה היא בהחלט לא סטארט-אפ טיפוסי. החברה הוקמה ב-2007 על בסיס מחקר שנערך בין 2003 ל-2007 במטרה לבצע "האקינג" למוח האנושי ולתרגם את שיטת הפעולה שלו לאלגוריתמים. תחום שאותו מכנים בחברה "קו התפר בין מדעי המוח לבינה מלאכותית", או מעין "הנדסה הפוכה" של המוח האנושי, שהפיקה אלגוריתם שמחקה את דרך עיבוד המידע במוח ומאפשר למערכת ללמוד ללא הנחייה - בדומה לילד שלומד עצמאית על העולם סביבו. אם לקוראינו זה נשמע מסתורי מאוד, הם לא לבד. עד לאחרונה טענו גם רבים מתוך הענף שאין בנמצא יכולות כאלה.

מטרת המחקר הראשונית הייתה להבין מהי היחידה החישובית הבסיסית של הקורטקס, כיצד הוא לומד ומה המודל המתמטי הפשוט ביותר אשר יכול לשחזר את היכולות האלה במחשב. מאחר וחלק מהמייסדים הם יוצאי 8200, הבינו בחברה את הפוטנציאל של הממצאים מבחינה ביטחונית.

מאז הקמתה נותרה קורטיקה כמעט מתחת למסכי הרדאר התקשורתיים, אם כי בענף יודעים לספר על הישגים עסקיים וטכנולוגיים לא מבוטלים שלה בתחום הביטחוני. היישומיים הללו כוללים ניתוח עצמי של מאגרי מידע גדולים ופעילות בתחום של כלי טייס לא מאוישים. הטכנולוגיה של קורטיקה יכולה לעבור עצמאית במהירות על שעות הווידאו הארוכות שמייצרים כלים כאלה ולהפיק מהם תובנות כמו איתור חשודים בריכוזי אוכלוסייה או מעקב אחר עצמים.

בחברה לא ששים לדבר על נושאים כספיים אך על פי אתר Crunchbase היא גייסה עד היום קרוב ל-70 מיליון דולר בשלושה סבבים, כאשר האחרון שבהם, בהיקף של כ-30 מיליון דולר, היה בדצמבר אשתקד בהובלת חברות השקעה גדולות מהונג קונג ורוסיה.

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הזוועה? אחוז לא גדה
נתח שוק וצרכנות

איך תגנו על המידע בארגון מכל הצדדים?
תוכן מקודם

הירי נמשך; נתניהו: "הנחיתי את צה"ל להמשיך בתקיפות
NEWS וואלה

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וידאו

אספן גרופ ויובלים רכשו קרקעות בנס ציונה ב-29 מיליון שקל
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המערכת שתכין את החברה שלכם למתקפת הסייבר הבאה
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אופציות תמורת תוספות שכר: הסכם קיבוצי חדש בסלקום
עמוד הבית

פרויקט הנדל"ן הייחודי שמעורר עניין בת"א
תוכן מקודם

לי יעניין אותך

בעוד 3 שנים תצטערו שלא קניתם דירה בשכונת פלורנטין
מגזין השקעות Real-Invest

הנקראות ביותר

כלים | פיד | תיק

"אחרי הגיוס המרכזי האחרון על פיתוח חדשים", אומר רייחלגאוז, מנכ"ל החברה ואחד מייסדיה. "הגענו לרכב אוטונומי בעל כמות המידע העצומה שהוא צריך לייצר - כמעט 4000 גיגהבייטים לרכב ביום. כדי לטפל במידע בהיקף הזה צריך מכוניות אוטונומיות עם מוח אוטונומי, כזה שיוכל לאסוף ולנתח מידע בסיסי, לזהות אותו ולצבור 'ניסיון' כמו נהג אנושי. לכן הגענו למסקנה שתחום הרכב הרבה יותר רלוונטי".

החברה מציגה באתר שלה טענות מרשימות מאוד, ויש מי שיגיד שאפתניות. לטענתה היא פיתחה "אינטיליגנציה מלאכותית שיכולה להבין תמונות ברמה אנושית". וכי "אפילו הטכנולוגיות המורכבות ביותר מעולם לא יכלו להבין את העולם החזותי באותה דרך שבני אדם מבינים - עד עכשיו. על ידי מינוף חקר המוח ליצירת מערכת AI עם יכולת לימוד עצמי, קורטיקה פיתחה את מערכת הראייה הממוחשבת האפקטיבית שיותר שנראתה אי פעם".

טענות החברה מגובות במאגר של קרוב ל-200 פטנטים שהוציאה על הטכנולוגיה שלה. מעל 50 כבר התקבלו, השאר בתהליכים. על פי דו"ח של חברת אינסייט מדובר במספר הפטנטים הגדול ביותר של חברה בודדת בתחום ה-AI. בהנחה שטכנולוגיה הזו תתורגם בהצלחה לעולם הרכב האוטונומי, מדובר בקפיצת דרך משמעותית מאוד כזו שענקי תעשיית הרכב והצ'יפים יהיו מוכנים לתת יד ורגל כדי לקבל עליה בלעדיות.

רייחלגאוז אומר כי לא מדובר בפתרון תיאורטי אלא במוצר על בסיס טכנולוגיה בוגרת ובשלה. "יש לנו כבר פיתרון לתעשיית הרכב ברמה של מוצר שעובד", אומר רייחלגאוז, "המערכת אדישה לתשתית החומרה עליה היא פועלת ויכולה לטפל באותה מידה במידע ממגוון חיישנים כולל רדארים, חיישני מצלמה, חיישנים סופר-סוניים ועוד". רייחלגאוז מגלה כי המוצר כבר נבחן על ידי שלוש חברות ענקיות מתחום הרכב, ששתיים מהן משלבות אותו בפלטפורמת המיחשוב שלהן. מדובר בשילוב הטכנולוגיה בתוכנית הפיתוח לרכבים אוטונומיים שאמורים לצאת כבר בשנתיים-שלוש שנים הקרובות. המוצר של קורטיקה בונה מודל סביבתי (תמונת מצב ממוחשבת) בזמן אמת ומאפשר גם חיזוי לצורך תגובה בזמן אמת. בנוסף הטכנולוגיה מאפשרת היתוך מידע ממספר רב של חיישנים לתוך חתימה דיגיטלית אחת.

לחזות מה עומד לקרות בכביש

"הפתרון הנפוץ כיום בתחום ה-AI, הוא למידה עמוקה", אומר רייחלגאוז. "זהו תהליך איטי. במערכת שפיתחה קורטיקה 'המוח' לומד בעצמו את חוקי המשחק, מתייג את המידע ומגיע למסקנות, כמו ילד שלומד להבין את

"שיטת פישמן: אנשי קש, סבב של נאמנויות והברחת נכסים בשווי 100 מיליון אי...

השופט בתביעת נוה נגד שטייף: "הנתבעים עושים דין לעצמם"
דין וחשבון

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המסע האחרון

גרייס ממונקו

היא

הנקראות ביותר

זה אולי המקום לציין, שבשל המורכבות של תהליכי ה-AI, הרבה מאוד פתרונות מסחריים בתחום מבוצעים כיום בשיטת "קופסה שחורה". כלומר מזינים למערכת את הנתונים ומקבלים את התוצאות המעובדות מבלי שניתן לעקוב ולזהות בדיוק איך הגיעה המערכת לאותן מסקנות. זוהי בעיה לא קטנה במערכות, עליהן מוטלות אחריות לחייהם ולבטיחותם של בני אדם וגם רגולטורים בעולם, כמו האיחוד האירופי, נדרשים כיום לתקן תקנות בנושא.

מערכות "למידה עמוקה" טיפוסיות גם מתקשות לצבור ידע ולהעביר אותו למערכות, מה שמאלץ את המפעילים של מערכות חדשות "ללמד אותן מבראשית". נקודת תורפה נוספת של שיטות נפוצות ללימוד עמוק היא הקושי בחיזוי ביצועי המערכת. אחרי כל "אימון" של ה-AI עשויים הביצועים להשתנות לחלוטין.

לעומת זאת המערכת של קורטיקה מייצרת מעין "חתימות" דיגיטליות, שמייצגות מושגים מוכרים מעולם המידע. חתימה יכולה להצביע, למשל, על קשר מערכתי כלשהו בזמן בדיקת המערכת וקישור לדוגמא (תמונה ואובייקט) המסבירים את סיבת הכשל. את "הניסיון" שצברה המערכת, אפשר להעביר מרכב לרכב ובין מערכות. "המערכת מאפשרת לעקוב אחרי תהליך 'החשיבה' וההסקה של ה-AI ולבחון אותו בקריטריונים של בקרה וביצועים", אומר רייחלגאוז.

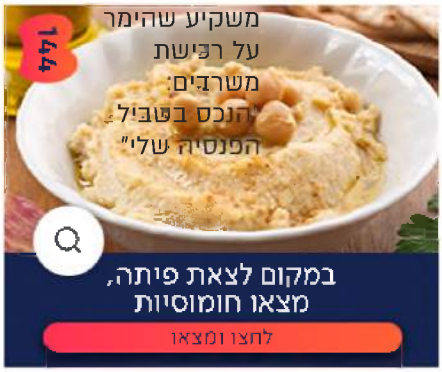
הפיתרון שמציעה החברה לרכב אוטונומי הוא רב מערכתי. המערכת שלה צוברת הבנה עמוקה על סביבתו המידית של הרכב ומזהה בו זמנית מעל עשרת אלפים אובייקטים "גנריים" כמו כלי רכב ומשאיות, הולכי רגל, מצבי תנועה שונים ועוד. הרזולוציה מספיק טובה כדי לזהות למשל הולך רגל על הוברבורד או כזה, שמחזיק בידו טלפון סלולרי.

המערכת יכולה לפענח מצבים מורכבים בקונטקסט שלהם וליצור מערך של הסתברויות לגבי הפעולה הבאה של האובייקט המאובחן, כולל אובייקטים נוספים שנכנסים לתוך הפריים. נסו לדמיין כדור שמתגלגל לכביש כאשר המכונית חוזה שקיימת הסתברות, שבעקבותיו יגיח גם ילד במסלול מסוים ובו זמנית מעריכה את התגובה לסיטואציה המכוניות שלפניה ומצדדיה, שנעות במהירויות משתנות. בנוסף המערכת מבצעת מיפוי ברמה גבוהה של הסביבה עם מעקב מתמיד אחרי שינויים בתשתיות ובעצמים בסביבה ופוטנציאל לשימוש לצורכי מיפוי ואיסוף מידע - בדומה לפרויקט אותו מנסה כיום מובילאיי לקדם באופן גלובלי. הטכנולוגיה של קורטיקה מבוססת על חתימות דיגיטליות אשר מייצגות בצורה גנרית את כל המידע הסנסורי המגיע מהעולם האמיתי. אחד השימושים המרכזיים בחתימות הוא לצורך מיפוי המרחב ומיקום מדויק של העצמים בתוכו, כולל מיקום מדויק ביותר של הרכב עצמו.

בעוד שטכנולוגיות המיפוי הקיימות, כמו זו של מובילאיי, מתבססות על

הנקראות ביותר

כלים פיד תיק



הטכנולוגיה של קורטיקה אדושה לסוג החיישנים וכן לסוג החומרה [illegible] מתחרה במובילאיי אלא יכולה להשלים אותה.

כאמור, מדובר על טכנולוגיה שיכולה לספק לתעשיית הרכב, ולא רק לה, קפיצת דרך משמעותית והמשמעות הכספית, ובהתחשב ברתיחה של השוק ובהערכות השווי של חברות מהתחום, היא מספרים גדולים.

אבל בשונה מהרבה חברות התחום שפגשנו לאחרונה, נראה שבקורטיקה לא מתרגשים מסכומים גדולים וגם לא מציבים אקזיט או הנפקה בראש סדר העדיפויות. "אין לנו אינטרס לצאת כרגע להנפקה או לגיוס משמעותי", אומר רייחלגאוז, "אנחנו מחפשים כרגע שותפויות אסטרטגיות עם שחקנים משמעותיים, רצוי מתחום הטיר1, שיעניקו לנו יכולת לממש את הטכנולוגיה במוצרים שישולבו בכלי רכב". בינתיים פועלת החברה במרץ לגייס עשרות עובדים מתחומים שונים כאשר כוח האדם הנוכחי שלה כולל מומחים מתחומים שונים כולל פיזיקה, מתימטיקה, מדעני מוח ומומחי בינה מלאכותית.

למרות זאת, אנחנו לא שוכחים את הנאומים עתירי החזון של מובילאיי (ואחרות) טרם ההנפקה והאקזיט, וכפי כמוכיח המקרה של מובילאיי, לכל אחד יש מחיר. במקרה של קורטיקה נראה שהיא מחזיקה במפתח לדלת, שאותה להוטים לפתוח כיום הסינים, ענקיות הצ'יפים, יצרני הרכב, חברות האינטרנט הענקיות ואולי אפילו מובילאיי עצמה. לפיכך לא נופתע אם במקרה של קורטיקה המחיר יורכב מעשר ספרות בדולרים.

טויוטה משקיעה בסטארט-אפ תל אביבי שמפתח חיישנים לחלק הפנימי של הרכב

חברת טויוטה היא אחת המשקיעות בחברת הסטארט-אפ הישראלית גארדיאן, שהודיעה על השלמת סבב גיוס ראשון של 5.1 מיליון דולר. גארדיאן (Guardian Optical Technologies), שהוקמה ב-2015, מפתחת חיישן אופטי לפנים הרכב, המאפשר לזהות מיקרו-תנועות ומייצר נתוני וידאו ומפת עומק של הרכב. לדברי מייסד ומנכ"ל החברה, גיל דותן, איכות החיישן והשימושים המגוונים שלו מאפשרים להקטין את מספר החיישנים בכל מכונית. צמצום מספר החיישנים צפוי לחסוך כ-20 דולר בייצור כל מכונית וכ-200 מיליון דולר בשנה בתעשיית הרכב כולה.

הנקראות ביותר
כלים פיד תיק

"המשימה שלנו היא לתמוך בחברות הישראליות שפוטנציאל הצמיחה שלהן ברור והן עתידות להוביל את תחומם בשנים קדימה. אנו נמשיך להתפתח ולהצליח" בשיחה עם "גלובס" התייחס לקבלת ההשקעה מטויוטה. "זו פעם ראשונה שהם משקיעים בחברה ישראלית וזו תחושת גאווה גדולה מאוד. טויוטה היא משקיע מסקרן ותומך מאוד". מעבר לגאווה ולנגישות המשופרת לשוק יצרניות הרכב, יש להשקעה משמעות גם כסימן מקדים לרכישה אפשרית של גארדיאן על ידי טיוטה בעתיד, בדומה לרכישת וויז'ואליד מהרצליה על ידי עליבאבא, שנתיים וחצי לאחר שקיבלה ממנה השקעה.

על המוצר עצמו אמר דותן: "יש המון חברות חיישנים נהדרות שנותנות ליצרניות הרכב 'עיניים' להבנה של מה שקורה מחוץ לרכב. אנחנו נותנים ליצרניות את היכולת להבין לעומק את המציאות שיש בתוך הרכב. החזון שלנו הוא לייצר את פלטפורמת החישה האולטימטיבית בתוך הרכב, כך שיתאפשר ליצרניות להיות מודעות יותר לנוסעים ועל ידי כך לשפר את חווית הנסיעה, להציע שירותים במהלך הזמן שלנו ברכב ולשפר את הבטיחות".

לדברי דותן, גארדיאן מקיימת קשר שוטף עם כמה יצרניות, בשאיפה להביא להטמעת החיישן שלה כבר בתחילת העשור הבא. אחד האתגרים הוא לגבש איפיון שאליו יתאימו את עצמם ספקים אחרים של יצרניות המכוניות.

"החיישן שלנו מאפשר לוותר על חיישנים ייעודיים לכל מערכת, למשל, החיישנים של כריות האוויר וחגורות הבטיחות", אומר דותן. "אנחנו יודעים להגיע לרזולוציות גבוהות של הרבה מאוד מידע, ויש לזה ערך גדול מבחינה עסקית. אחד השימושים, למשל, הוא ניטור ההתנהגות של נוסעים במכוניות האוטונומיות שיעלו בקרוב לכבישים, כדי להתאים את תא הנוסעים לדרך החדשה שבה נעשות נסיעות. שימוש אחר הוא לציי רכב אוטונומיים, שיוכלו לדעת מרחוק מתי בדיוק נכנסו ויצאו נוסעים מהמכוניות שלהם. שימוש אפשרי נוסף של החיישן הוא לוודא שלא נשאר אף אחד במכונית, נניח ילדים במושב האחורי".

גארדיאן פועלת מתל אביב ומעסיקה 14 עובדים, רובם פיזיקאים ומפתחי אלגוריתמים. יו"ר הדירקטוריון הוא אלון עצמון, לשעבר סמנכ"ל אסטרטגיה בחברת הרמן, שהסניף הישראלי שלה רכש בשנים האחרונות חברות בתחום הגנת סייבר ועדכוני תוכנה לתעשיית הרכב. בגארדיאן מתכוונים להגדיל בשנה הקרובה את מספר העובדים ל-30 לפחות, אתגר שבחברה מכנים "צרות טובות" על רקע התחרות העזה על אנשי טכנולוגיה. בחברה מקווים שהאתגר הטכנולוגי והפרופיל הגבוה של תעשיית הרכב האוטונומי יפתו את מיטב הפיזיקאים ומפתחי האלגוריתמים, וגם, באופן בלתי נמנע,

הנקראות ביותר

כלים פיד תיק

מייסדים: יגאל רייחלגאוז (הנמכ"ל), הרצה אודינייב ופרופ' יהושע (שוקה) זאבי

שנת הקמה: 2007

מספר עובדים: 100, רובם בתל אביב. בימים אלו החברה מגייסת עשרות מפתחים נוספים

גיוסי הון: כ-70 מיליון דולר

משקיעים: עוזיה גליל, סמסונג, לי קה שינג, Qihoo, Mail.ru ואחרים

כיצד יכולים עסקים קטנים ובינוניים להתמודד עם קשיי תזרים ומחסור באשראי? מקודם

מקור: Crunchbase

בינה מלאכותית | שוק הרכב | מובילאיי (Mobileye) | רכב אוטונומי | אוטוטק

עקבו אחרינו ברשתות

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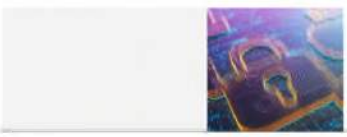

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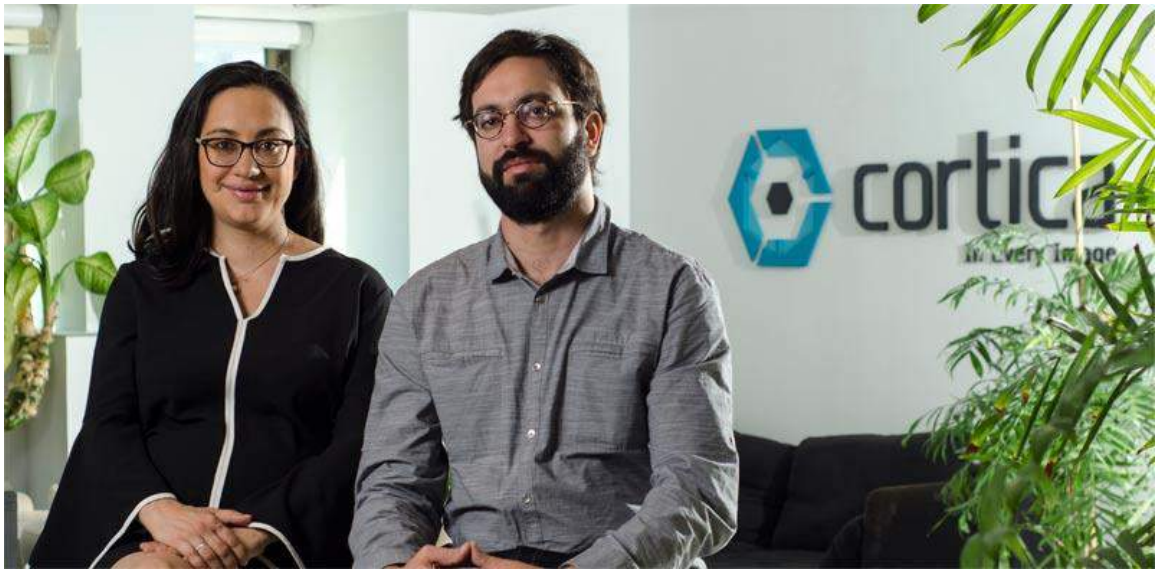
The holy grail: will Cortica be the next Mobileye?

The Israeli Cortica uses artificial intelligence to help vehicles deal with urban chaos. ■ The company raised approximately USD 70 million, from the billionaire Li Ka Shing among others.

09:54, December 5, 2017 Dubi Ben-Gedalyahu



Igal Raichelgauz and Karina Odinaev / photographer: Liran Shitrit

Several days ago, I came across a traffic circle in the heart of the German colony in Haifa which the locals call "the grinder." Traffic reaches the circle comes from four different directions, and there are two lanes in each direction. In one part of the circle is a traffic light with pedestrian crossings on the sides and the famous Metronit bus system passing nearby. There is no such thing as the right of way in this urban combat zone, and on this particular day, there was a special delight in the form of garbage on one of the lanes, which forced drivers to zigzag when they were passing other cars. To make a long story short, it was a rather typical transportation hell.

In order to pass through this roundabout, the drivers have to drive in a very specific way that is not for the timid: you have to look in three directions simultaneously while making eye contact with the drivers crossing the circle in order to assess their determination/sanity, anticipate when the traffic lights will change, ignore the constant honking, and wade in with the knowledge that you may have to brake, accelerate, or climb onto the traffic island in the middle at any instant. Now imagine yourselves sitting in an autonomous car in which the computer is supposed to bring the car to the other side of the roundabout by maneuvering between non-autonomous vehicles.

The key to an autonomous vehicle: artificial intelligence

In attempting to translate intuitive "driving policy" acquired from human experience into the language of algorithms and programming, in which the autonomous vehicle's computer "sees" and "thinks," you run head on into a technological barrier. Autonomous vehicle engineers and developers of smart sensors and components now know how to detect vehicles, pedestrians, road

signs, and road obstacles under different road conditions, but merging data from dozens of sensors in order to predict the traffic makes it necessary to process a massive amount of visual information in real time. Estimates are that each autonomous vehicle will create 4,000 gigabytes of visual information on a typical day's driving.

The solution now being adopted by the auto industry is to use machine vision and artificial intelligence (AI) in order to give the sensors and data processors in the vehicle capabilities similar to those of human vision - from absorption of a massive stream of information to filtering, processing, and translating the information into action. This technology is already attracting a multi-billion dollar per-year market with dozens of startups, and is now changing the way work is done in espionage, medicine, marketing, and so on. The autonomous vehicle, however, poses a serious challenge, due to the complex interactions of the road and the need for a "driving policy" mentioned earlier.

The current prevailing approach to designing AI systems for an autonomous vehicle is "supervised study." In other words, if you want your system to be able to independently detect a road sign or marking, you have to feed into it a very large amount of catalogued examples of that road sign under various lighting and climate conditions, so that it will issue alerts about them by honking (in passive systems) or respond to them by independent braking, for example.

This method, however, requires a great deal of time and "learning" resources, and it is far from perfect. Its detection and adaptation ability is only as good as the information fed into it during learning, and the result is liable to be false alarms or detection failures. When a traffic light, road sign, or oncoming vehicle is involved, 99% accuracy is just not good enough.

What the auto industry is really looking for now are AI systems with self-learning capability - what is sometimes also called "unsupervised learning" - systems that can perform the process from the bottom up, i.e. independently achieve detection and conclusions according to the data gathered on the road, rather than from the top down, i.e. through preprogrammed examples.

This is generally considered the “holy grail” of the AI sector, and it is a distinct possibility that the search for it will specifically lead the auto industry to Israeli company Cortica, which has developed AI technology with self-learning capability.

Ambitious goal, proven technology

Cortica is absolutely not a typical startup. The company was founded in 2007 on the basis of research conducted in 2003-2007 for the purpose of "hacking" into the human brain and translating its method of operation into algorithms. The company calls this "the borderline between brain science and AI" or "reverse engineering" of the human brain. It has produced an algorithm that imitates the way information is processed in the brain, and enables the system to learn without supervision - like children independently learning about the world around them. If that sounds very mysterious to our readers, they are not the only ones. Up until recently, many people in the sector also asserted that such capabilities could not be achieved with the existing technology.

The goal of the initial research was to understand what the basic calculation unit of the cerebral cortex is, how it learns, and what is the simplest mathematical model that can reproduce these

capabilities in a computer. Since some of the founders are IDF Intelligence Unit 8200 alumni, the company realized the security potential of the findings.

Since it was founded, Cortica has remained largely below the media radar screens, although sources in the sector are aware of its considerable business and technological accomplishments in the security field. These applications include self-analysis of large databases and activity in the field of unmanned aerial vehicles. Cortica's technology can independently and rapidly go over the many hours of video that create such tools and produce insights from them, such as location of suspects in population centers and monitoring objects.

The company does not like to talk about financial matters. According to the Crunchbase website, however, it has raised nearly $70 million to date in three rounds, the most recent of which was in December last year, when it raised $30 million in a round led by major investment companies from Hong Kong and Russia.

The company started working in the autonomous vehicle sector last year, having developed successful internet and mobile communications products in recent years, mainly in the Asian markets.

"After the last large-scale round, we considered new development horizons," says Cortica cofounder and CEO Igal Raichelgauz. "We entered the autonomous vehicle sector because of the enormous quantity of information it is expected to generate - almost 4,000 gigabytes per vehicle per day. In order to handle information on this scale, you need autonomous machines with an autonomous brain that can collect basic information from its surroundings, identify it, and accumulate 'experience' like a human driver. We therefore concluded that the auto industry is much more relevant."

The company makes very impressive claims on its website; some will call them overambitious. The company asserts that it has developed "artificial intelligence that can understand images at a human level" and "Even the most complex technologies could not understand the visual world in the same way that people do - until now. By utilizing brain research in order to create an AI system with self-learning capability, Cortica has developed the most effective computer vision system ever seen."

The company's claims are backed with a store of nearly 200 patents requested for its technology. Over 50 of these have already been accepted, and the rest are in the approval process. According to a report by Insight, this is the largest number of patents by a single AI company. Assuming that this technology is successfully translated to the autonomous vehicle sector, it will be a very significant breakthrough, and the vehicle and chip industries will be willing to give an arm and a leg to obtain exclusivity for it.

Raichelgauz says that what his company has is not a theoretical solution; it is a product based on mature and available technology. "We already have a solution for the auto industry at the level of a product that works," Raichelgauz says. "The system is indifferent to the hardware infrastructure on which it operates, and can handle information to the same degree from a variety of sensors, including radar, camera sensors, supersonic sensors, and others." Raichelgauz reveals that the product is already being tested by three major auto industry companies, two of which are including it in their computer platforms. The technology is being integrated in the development

plan for autonomous vehicles scheduled to be built in the next two or three years. Cortica's product builds an environmental model (a computerized status report) in real time and facilitates prediction for the purpose of real-time responses. The technology also makes it possible to fuse information from a large number of sensors into one digital signature.

Predicting what will happen on the road

"The usual solution today in AI is deep learning," Raichelgauz says. "This is a slow process. In the system developed by Cortica, the 'brain' learns the rules of the game by itself, labels the information, and reaches conclusions, like children learning to understand their surroundings. What is special about Cortica's technology is not only its self-learning capability, but also that it is transparent, transferrable, and verifiable."

This may be the right place to interject that due to the complexity of the AI processes, a great many commercial solutions are now being offered through the "black box method": data are fed into the system and the processed results are received, without any ability to monitor and understand exactly how the system reached those conclusions. This is a considerable problem for systems that are responsible for people's lives and safety, and regulators worldwide, e.g. in the EU, are now having to enact regulations in the matter.

Typical “deep learning” systems also have trouble accumulating knowledge and transmitting it to systems, which forces those operating new systems "to study them from scratch." Another weak point of the common deep learning methods is the difficulty in predicting the system's performance. After each AI “training”, the performance is likely to be completely different.

Cortica's system, on the other hand, creates digital "signatures" that represent known concepts from the information world. A signature can indicate, for example, some kind of systematic connection when the system is being tested and a sample link (image and object) that explain the reason for the failure. The "experience" accumulated by the system can be transmitted from one vehicle to another, and between systems. "The system makes it possible to monitor the AI process of 'thinking' and drawing conclusions, and to assess it according to supervisory and performance criteria," Raichelgauz says.

The solution that the company is offering for an autonomous vehicle is multi-system. Its system accumulates a profound understanding of the vehicle's immediate surroundings, and simultaneously identifies over 10,000 “generic” objects, such as vehicles and trucks, pedestrians, traffic situations, and more. For example, the resolution is good enough to identify a pedestrian on a hoverboard or one holding a mobile telephone.

The system can decode complicated situations in their context, and create a system of probabilities about the observed object's next action, including additional objects entering the frame. Try to imagine a ball rolling onto the road when the car predicts that there is a possibility that a child will then also appear on the given route, and simultaneously assess the response to the situation by the cars in front and on the sides, which are moving at different speeds. In addition, the system also maps the surroundings at a high level, with a constant monitoring of changes in the surrounding infrastructure and objects and potential for using them for mapping and information gathering - like the project that Mobileye is now trying to promote globally. Cortica's technology is based on digital signatures that generically represent all the sensor

information coming from the real world. One of the main uses of signatures is for mapping the space and precise location of the objects in it, including an extremely accurate location of the vehicle itself.

While the existing mapping technologies, such as that of Mobileye, are based on anchors - predefined objects such as traffic lights and road signs, Cortica's signature utilizes every pixel in the image for anchoring and mapping. For example, in driving on a dirt road, Cortica's signatures are put next to boulders and specific road formations, making it possible to maintain precise mapping. Because Cortica's technology is indifferent to the type of sensors and the type of hardware, it complements Mobileye's technology, instead of competing with it.

Cortica's technology can provide the auto industry and other industries with an important and financially significant breakthrough. Taking into account the red-hot market and the values of companies in it, the numbers are very large.

In contrast to many companies in the sector that we recently talked to, Cortica appears unimpressed by the large amounts, and is not making an exit or IPO a top priority. "We have no interest in an IPO or large-scale financing round right now," Raichelgauz declares. "At the moment, we're looking for strategic partnerships with important players, preferably tier-1, who will give us the ability to utilize the technology in products that will be included in vehicles." Meanwhile, the company is making an effort to recruit dozens of employees from various areas, while its current employees include experts in various fields, including physics, mathematics, brain science, and AI specialists.

Notwithstanding, we still remember the visionary speeches made by Mobileye (and others) prior to their IPOs and exits, and as Mobileye proves, everyone has a price. In Cortica’s case it appears that it holds the key to a door which many people are trying to open including the Chinese, the chip giants, vehicle manufacturers, the giant internet companies and perhaps even Mobileye itself. Therefore, we won’t be surprised if, in Cortica’s case the number is made up of USD ten figures.

Toyota invests in the Tel Aviv start-up which develops sensors for the internal part of the vehicle

Toyota is one of the investors in Israeli startup Guardian Optical Technologies, which has announced that it completed its first financing round, in which it raised $5.1 million. Guardian Optical, which was founded in 2015, has developed an optical sensor for the interior of a vehicle that makes it possible to detect very small movements and create video data and a depth map of the vehicle. Guardian Optical founder and CEO Gil Dotan says that the sensor's quality and diverse uses make it possible to reduce the number of sensors installed in each car. Reducing the number of sensors is expected to save $20 on the production of each car and $200 million a year in total savings for the auto industry.

Toyota invested in the round through the Mirai Creation fund, which it founded two years ago with the SMBC bank and the Sparx investment group. Toyota provides most of the fund's financing, but the fund's manager is Sparx CEO Shuhei Abe. Following the financing round, Abe said, "Our task is to support innovative companies with clear growth potential that are likely to lead the field decades into the future. We expect the technology developed by Guardian Optical to continue developing and succeeding."

Speaking about the financing round by Toyota, Dotan told Globes," This is the first time that they are investing in an Israeli company, and it makes me feel very proud. Toyota is a very intriguing and supportive investor." Beyond the pride and the improved access to the auto manufacturers market, the investment is also important as an early sign of a possible future acquisition of Guardian Optical by Toyota, similar to the acquisition of Herzliya-based Visualead by Alibaba two and a half years after Alibaba first invested in the Israeli company.

About the product itself, Dotan said, "There are many great sensors companies providing the automakers with eyes for understanding what is happening outside the vehicle. We're giving the automakers the ability to understand in depth the situation within the vehicle. Our vision is to create the ultimate sensory platform within the vehicle that will enable the manufacturers to be better aware of the passengers, and thereby to improve the travel experience, offer services during the time we spend in the vehicle, and improve safety."

According to Dotan, Guardian Optical is in constant contact with several manufacturers with the aim of installing its sensor early in the next decade. One of the challenges is to write a specification to which other suppliers of auto manufacturers will adapt themselves.

"What is special about our sensor is that it makes it possible to eliminate special sensors for each system, for example the sensors for air cushions and seat belts," Dotan explains. "We are able to achieve high resolution for a very large amount of information, and this has great business value. For example, one of the uses is monitoring the behavior of passengers in the autonomous cars that will soon be on the road in order to adapt the passenger compartment to the new way in which travel will take place. Another use is for autonomous vehicle fleets, which will be able to tell remotely exactly when passengers entered and exited from their cars. Still another possible use of the sensor is making sure that no one has been left inside the car, such as children in the back seat."

Tel Aviv-based Guardian Optical has 14 employees, most of them physicists and algorithm developers. The company chairman is Alon Atsmon, former VP technology strategy at Harman International, whose Israeli branch has acquired companies in cyber security and software updating for the auto industry in recent years. Guardian Optical plans to increase its staff to at least 30 in the coming year, a challenge that the company calls "good troubles," given the intense competition for technology personnel. The company hopes that the technological challenge and high profile of the autonomous vehicle industry will tempt the best physicists and algorithm developers, "because we're doing something good in the world."

Cortica

Founders: Igal Raichelgauz (CEO), Karina Odinaev and Professor Yehoshua (Shuka) Zeevi

Year established: 2007

No. of employees: 100, most in Tel Aviv. Currently the company is hiring dozens more developers

Fundraising: Approximately $70 million

Investors: Uziah Galil, Samsung, Li Ka Shing, Mail.ru, Qihoo and others.

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Paris Auto Show

Next Generation AI Will Be Based on the Mammal Brain, Says Cortica Exec

The current deep learning and general intelligence approaches to artificial intelligence are cumbersome and limited, says Cortica co-founder Karina Odinaev, speaking at a conference on innovation held by Calcalist at the Mondial de l'Automobile auto show in Paris

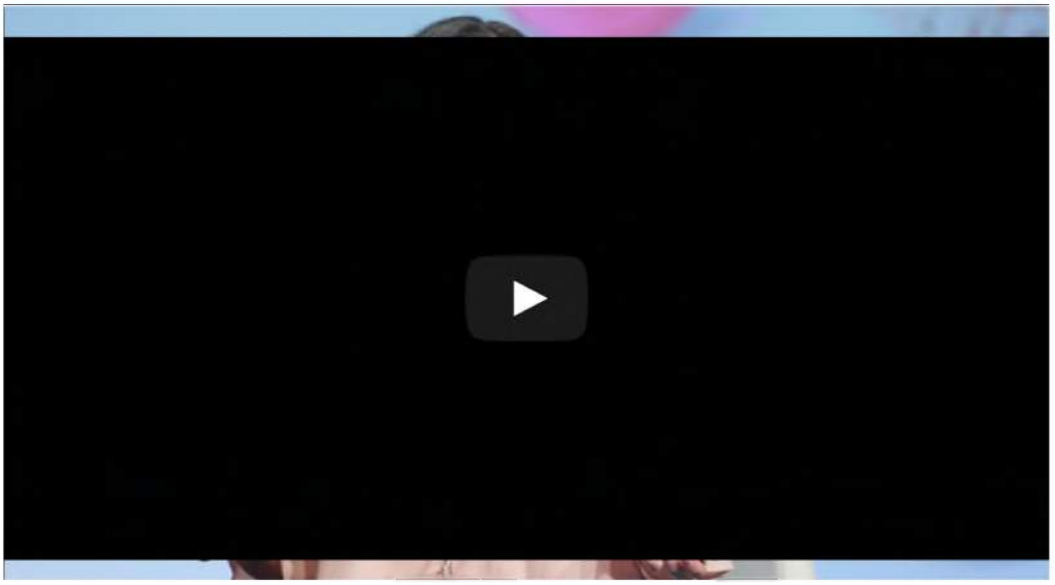
Omer Kabir 11:08 07.10.18

TAGS: Mondial de l'Automobile Paris Motor Show Cortica Artificial Intelligence Computer Vision

"The world is shifting to autonomous platforms at an accelerating pace," said Tuesday Karina Odinaev, co-founder and chief operating officer of computer vision company Cortica Inc. to handle the enormous amount of data being generated by these platforms, such as autonomous cars, a very advanced artificial intelligence with great processing power is needed, she said.

For daily updates, subscribe to our newsletter by clicking here.

Odinaev spoke Tuesday at a conference on innovation held jointly by Calcalist and events firm Connecting Leaders Club at the Mondial de l'Automobile auto show in Paris.



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Around 2012, the approach to AI shifted to deep learning, Odinaev explained, but such algorithms require much human intervention and supervision and lack transparency, and are also task-limited and thus have a glass ceiling. "Some scientists believe that the next step is artificial general intelligence," she said, but when it comes to the best example—human intelligence—there is no such thing but rather multiple types of intelligence that combine together, like mathematical, interpersonal, and linguistic intelligence. Therefore, the next generation AI, according to Cortica, will be based on the biological principles of the mammal brain.

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- The Connected Vehicle of the Future will Require a New Architecture
- Auto-Derived Data is Worth Billions, Says Autotech Executive
- All Connected Cars Will Be Hacked, Says Auto Cybersecurity Executive

Founded in 2007, Tel Aviv-based Cortica develops image recognition technology designed for use in autonomous cars. The company raised $38 million to date according to Pitchbook data from investors including Horizon Ventures, Samsung Ventures, and the Technion-Israel Institute of Technology.

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מערכת מתקדמת שפיתחה חברת קורטיקה מזהה בזמן אמת התנהגויות חריגות, כולל מעשי אלימות. מנכ"ל החברה: "היא מזהה האם הילד מטופל כראוי ויודעת לנתח את הבעות הפנים שלו"

סתיו נמר 09/09/2018 08:49 3 דק' קריאה

תגיות: גני ילדים / אלימות / בינה מלאכותית / קורטיקה

גן ילדים, אילוסטרציה (למצולמים אין קשר לנאמר בכתבה) (צילום: רויטרס)

אף שמעונות היום, גני הילדים ובתי הספר אמורים להיות מקומות בטוחים עבור ילדינו, ללא פיקוח נאות מקומות אלו עלולים להוות סכנה של ממש עבורם. תפקידה של המערכת החדשה שפיתחה חברת ההייטק קורטיקה הינו להרגיע את חששות ההורים.

אולי יעניין אותך גם

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- מהם תיקי השקעות ייחודיים ולמי הם מתאימים? (IBI-בית השקעות)
- את המשבר הראשון המשמעותי של כהונתו - כוכבי יצר במו ידיו
- קראו על מהפכת הנדל"ן בשכונת קריית היובל בירושלים (וואלה! נדל"ן)

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27

כל הורה שמפקיד את ילדיו בידי מטפל בבית או במוסד חינוכי כזה או אחר רוצה לדעת שהוא בידיים טובות. בעיקר כשמדובר בפעוטות, שלא יודעים כיצד לשתף את הוריהם בחוויות היומיום שעברו. אף שכיום גנים רבים מרושתים במצלמות אבטחה מסוגים שונים, שמספקות הרתעה, אין מצלמה המסוגלת להתריע בזמן אמת. קורטיקה, שנוסדה לפני כ־11 שנים על ידי קרינה אודינייב, יגאל רייחלגאוז ופרופ' יהושע זאבי, פיתחה מערכת המבוססת על בינה מלאכותית, שתפקידה הוא לענות בדיוק על הצורך הזה.

הטכנולוגיה מאפשרת למחשבים ללמוד באופן עצמאי על העולם סביבם ללא עזרת אדם. מייסדי החברה פיצחו את הפעילות הנוצרת ברקמות מוח חי. הפריצה למוח שיקפה כיצד המוח עובד עם מידע חזותי, ואותם דפוסי פעילות המתרחשים בנוירונים הועתקו לתוכנה היכולה להבין את העולם על בסיס מידע חזותי. הטכנולוגיה החדישה נקראת "בינה מלאכותית אוטונומית" ומאפשרת למחשבים ללמוד באופן בלתי מוגבל כפי שאנו בני האדם עושים מלידה בעזרת מוחנו ועינינו.

"בחודשים האחרונים פורסמו בתקשורת מקרי התעללות רבים שאירעו בגני ילדים ומוסדות חינוך. פרסום זה גרם לארגונים רבים לפנות אלינו בבקשה לבדוק האם יש לנו פתרון מתאים", סיפר רייחלגאוז, מנכ"ל החברה, "פיתחנו טכנולוגיה המתבססת על בינה מלאכותית. היא קולטת כמות עצומה של אותות, במקרה הזה מדובר בתמונות ממצלמות אבטחה, והיא מצליחה להתריע בפני גורמים שונים ברגע שהיא מאתרת משהו חריג. המערכת יכולה לזהות מתי ילד ישן, איך התנהלה הפעילות במהלך היום בגן, האם אנשי הצוות עישנו ליד הילדים או שלא השגיחו עליהם כמו שצריך". יש לציין כי מעבר לפיקוח על צוות המקום, המערכת גם יכולה להפיק להורה סיכום וידאו יומי קצר על פעילויות הילד במוסד.

לאחרונה החלה החברה לחפש גני ילדים ופעוטונים על מנת להטמיע בתוכם את הטכנולוגיה הזו. המערכת מעבדת את המידע הנקלט במצלמות של גן שגרתי ללא אלימות, ולמעשה לומדת כיצד נראה טיפול נאות. כך תוכל המערכת לזהות באופן מוצלח יותר פעילות חריגה של אלימות. "היא צריכה לזהות את השגרה בגן, וברגע שהיא לומדת אותה היא יודעת לזהות חריגות מהשגרה - כמו אירועי אלימות שונים או מצב שבו הילדים יוצאים לחצר בלי מבוגר אחראי. יש פה גם אלמנטים אמוציונליים כמו ניתוח הבעות הפנים של הילדים, שיכולות לרמוז לנו בזמן אמת מה קורה בגן", אומר רייחלגאוז, שמדגיש כי החברה לא שומרת את הצילומים. "המצלמות שנמצאות כיום ברוב הגנים לא מאפשרות לחזור אחורה בלאו הכי, כך שחומר לא זולג החוצה והן משמשות רק להרתעה מפני פגיעה בילדים".

הוא הוסיף כי שימוש נוסף לטכנולוגיה החדישה הוא שילובה ברכבים אוטונומיים: "היא תאפשר לרכב להבין סיטואציות על הכביש ולמנוע תאונות. בנוסף, הטכנולוגיה הזו יכולה לסייע לצוותים רפואיים לנתח תשובות של בדיקות שונות, בעזרת הצבעה על חריגות מסוימות".

רייחלגאוז חשף כי החברה התבקשה לנתח את התאונה הקטלנית שבה היה מעורב רכב של "אובר" לפני מספר חודשים, שבמהלכה דרס למוות הולכת רגל. "המערכת שלנו זיהתה את הולכת הרגל כשהיא לבשה בגדים שחורים בחושך, ולכן לא ברור מדוע המערכת של אובר לא הצליחה לזהות אותה. אני מאמין שהמעבר לרכב אוטונומי יתרחש רק בעוד מספר שנים ובהדרגה הם יהפכו להיות יותר בטוחים".

לפני כחצי שנה, בעת ביקורו של המיליארדר אילון מאסק בארץ, נחשף ב"מעריב־אונליין" כי הוא נפגש עם נציגי החברה. רייחלגאוז סרב להתייחס אך הדגיש: "אנחנו עובדים כיום עם מספר חברות גדולות ברחבי העולם".

תגובות, הצעות ופניות במייל: Techeditor.101@gmail.com

מעריב on-line

Business Technology

"Our System Autonomously Identifies Unusual Events in Kindergartens and Will Assist in Creating an Autonomous Car"

An advanced system developed by Cortica identifies unusual behaviors in real-time, including violence. The company's CEO: "It identifies whether the child is properly taken care of, and can analyze his or her facial expressions."

Stav Namer September 9, 2018, 08:49 AM Reading time: 3 minutes

Tags: Kindergartens / violence / artificial intelligence / Cortica

Kindergarten. Illustration (The people in the photograph have no connection to the article.) (Photo: Reuters)

Although daycare centers, kindergartens and schools should be safe places for our children, without adequate supervision, these places can be a real danger for them. The role of the new system developed by hi-tech company Cortica is to assuage parents' concerns.

Any parent placing his child in the care of a caretaker at home or in any educational institute wants to know that the child is in good hands, especially with toddlers, who cannot share their day-to-day experiences with their parents. Although nowadays many kindergartens have installed security cameras of different types, as deterrence, no camera can alert in real time. Cortica, which was founded

approximately 11 years ago by Karina Odinaev, Igal Raichelgauz and Prof. Yehoshua Zeevi, developed a system based on artificial intelligence with the purpose of answering exactly this need.

This technology allows computers to independently learn about the world around them without human assistance. The company's founders deciphered the activity created in living brain tissue. Hacking into the brain reflected how the brain works with visual information, and those patterns of activity taking place in neurons were copied to software which can understand the world on the basis of visual information. The innovative technology is called "autonomous artificial intelligence" and allows computers to learn without limitation, like we humans do from birth, using our brain and eyes.

"In recent months, the media reported many cases of abuse taking place in kindergartens and educational institutes. Such publications caused many organizations to contact us with a request to examine whether we have a suitable solution," said Raichelgauz, the company's CEO. "We developed a technology based on artificial intelligence. It receives a vast quantity of signals, in this case images from security cameras, and succeeds in alerting different factors the moment it identifies something unusual. The system can recognize when a child is sleeping, how activities were conducted over the day in the kindergarten, whether staff smoked near the children or failed to adequately look after them." It should be noted that beyond supervision over the institute's staff, the system can also produce for the parent a short daily video summary of the child's activities in the institute.

Recently, the company started looking for kindergartens and preschools in which to assimilate this technology. The system processes the information captured by an ordinary kindergarten, without violence, and in fact learns what adequate care looks like. In this way, the system will be able to more successfully identify unusual violent activity. "It needs to recognize the kindergarten's routine, and once it learns it, it can identify deviations from the routine – like different violent events or a situation where the children go out to the garden without adult supervision. There are also emotional elements here, such as analyzing the children's facial expressions, which can hint in real-time at what is going on in the kindergarten," said Raichelgauz, who emphasized that the company does not store the images. "The cameras installed at present in most kindergarten do not enable rewinding anyway, so that material cannot leak outside, and they are used only as deterrence against hurting the children."

He added that another use of this innovative technology is integrating it in autonomous cars: "It would allow the car to understand situations on the road and prevent accidents. In addition, this technology could assist medical teams in analyzing different test results, by pointing to certain deviations."

Raichelgauz revealed that the company was requested to analyze the fatal accident involving an Uber vehicle several months ago, in which it ran over and killed a pedestrian. "Our system recognized the pedestrian when she was wearing black cloths in the dark, so it is unclear why Uber's system failed to recognize her. I believe that the shift to autonomous cars will happen only in several years, and gradually they will get safer."

About half a year ago, when billionaire Elon Musk visited Israel, Maariv-Online revealed that he met with the company's representatives. Raichelgauz refused to respond but emphasized: "we are currently working with several big corporations from around the world."

Comments, proposals and suggestions by email: Techeditor.101@gmail.com

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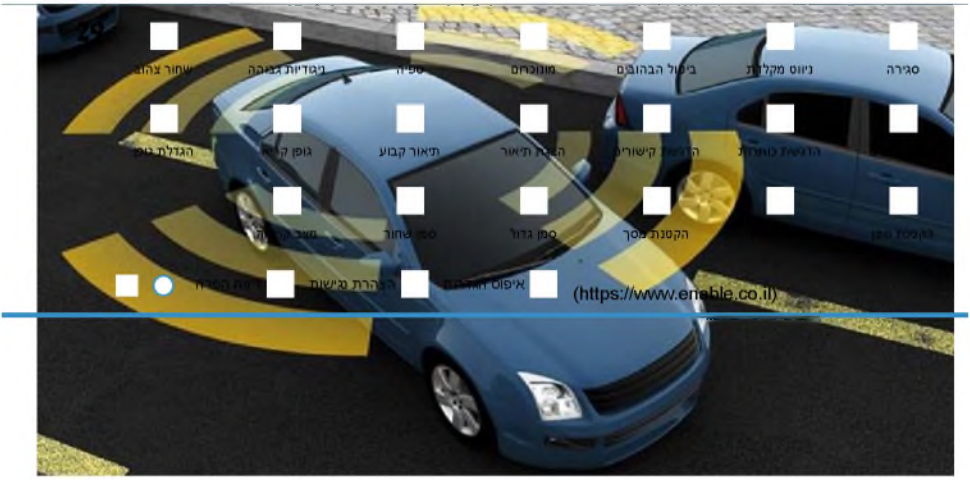
(http://events.easx.co.il/MicrosoftEmbedded.htm?utm_source=mail&utm_medium=mail&utm_campaign=TechTime)

קורטיקה פיתחה AI אוטונומי לרכב אוטונומי

13 ינואר, 2019

בניגוד למערכות AI כמו זו של מובילאיי, האלגוריתמים של קורטיקה לומדים ללא הנחיה מראש וללא תיוג, מה שמקנה להם דיוק ומורכבות גדולים יותר. כעת, קורטיקה תשתף פעולה עם Renesas היפנית בתחום הרכב



מקובל להמשיל טכנולוגיות בינה מלאכותית כמו למידה עמוקה ורשתות נוירונים לאופן פעולתו של המוח האנושי. ואולם, בעוד המוח האנושי לומד על העולם באופן עצמאי מתוך התבוננות חופשית במציאות, מערכות של בינה מלאכותית בתחום החישה הממוחשבת אינן לומדות כי אם מאומנות, באופן מונחה ושיטתי, לזהות אך ורק אובייקטים שהוגדרו מראש, מה שמגביל מאוד את כמות התובנות שהן מצליחות להפיק מהסביבה.

חברת קורטיקה (Cortica (https://www.cortica.com/index.html)) מתל אביב פיתחה פלטפורמת בינה מלאכותית "אוטונומית", אשר מסוגלת ללמוד באופן עצמאי ובלתי מונחה על אובייקטים במרחב, ללא צורך להסתמך על מאגרי ענק של תמונות מתויגות. לדברי החברה, הטכנולוגיה שלה מאפשרת יכולות זיהוי מדויקות ומורכבות יותר בהשוואה למערכות הקיימות, וכל זאת תוך שימוש בכוח מחשוב נמוך לאין שיעור. בשבוע שעבר דיווחה החברה על שיתוף פעולה ראשון בתחום הרכב החכם עם ענקית השבבים היפנית Renesas.

קורטיקה הוקמה ב-2007 על ידי שלושה חוקרים מהטכניון – יגאל רייחלגאוז, קרינה אודינייב וג'וש זאבי – אשר ייסדו את קורטיקה על בסיס מחקר משותף ששילב בין מדעי המוח, הנדסת חשמל ובינה מלאכותית. מטרתם של השלושה היתה לבנות פלטפורמה של בינה מלאכותית שתחקה בצורה דיגיטלית את האופן שבו הקורטקס (מכאן השם "קורטיקה") של יונקים לומד על המציאות. כך פיתחה קורטיקה אלגוריתמים של בינה מלאכותית שמסוגלים ללמוד על המציאות ולייצר תובנות ללא הכוונה מראש.

בשיחה עם TechTime מספר מנכ"ל קורטיקה יגאל רייחלגאוז על התשתית התיאורטית של הטכנולוגיה שפיתחה החברה. "המטרה שלנו היתה לקחת את מערכות ה-AI, שכיום הן מאוד שונות מהמוח האנושי, ולקרב אותן לאיך שהקורטקס פועל. אנשים לומדים בצורה לא מפוקחת, מתוך התבוננות בסביבה והיכולת שלנו לזהות אלמנטים משותפים וליצור ייצוגים שמאפשרים לנו לשייך אובייקטים דומים לתוך קטגוריות כלליות ".

ללמוד ללא מאמן

כדי לאמן מערכות של למידה עמוקה או רשתות נוירונים לזהות קטגוריה מסוימת של אובייקטים בעולם – למשל הולכי רגל או תמרורי דרך – יש צורך להזין את המערכת במיליוני, ולעיתים מיליארדי, דוגמאות של תמונות המציגות את אובייקט המטרה באינספור הקשרים ויזואלים שונים (זווית, תאורה, גודל, צבע וכדומה). כדי שהמחשב יוכל להבין מה מוצג בתמונות ולבנות מודל שיאפשר לו לזהות את אותו אובייקט לאחר תהליך האימון, יש צורך לתייג את האובייקטים המופיעים בכל תמונה ותמונה. תהליך התיוג נעשה בדרך כלל באופן ידני על ידי בני אדם. כך למעשה פועלים, למשל, האלגוריתמים של מובילאיי בתחום הראייה הממוחשבת לרכב.

שיטה זו לוקה במספר חסרונות: תהליך האימון הינו ממושך ויקר, ופעמים רבות רמת הדיוק של המערכת אינה מושלמת והיא מתקשה לזהות מקרי קיצון. מעל הכול, החיסרון המשמעותי ביותר, ומה שמבדיל בין הטכנולוגיות הללו למוח האנושי, הוא בכך שהמערכת לומדת אך ורק על האובייקט שהוגדר מראש, מבלי לאפיין דפוסים והקשרים על אובייקטים אחרים המופיעים בסביבה.

לעומת זאת, בלמידה בלתי מונחית (Unsupervized), המערכת לומדת על המציאות ללא תיוגים או הגדרות מראש. למעשה, האלגוריתמים הללו מנתחים את האינפורמציה הגולמית ומחפשים נקודות דמיון ושוני, תבניות חוזרות ויחסים בין אובייקטים במרחב, וכך ביכולתם להפיק הרבה יותר תובנות על המציאות שלא הוגדרו מראש על ידי המאמן האנושי.

קראו עוד
מפיץ מורשה
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(https://www.enable.co.il)

רכב אוטונומי צריך בינה מלאכותית אוטונומית

מנכ"ל קורטיקה יגאל רייכלגהוז

קורטיקה הוקמה כבר לפני למעלה ועשור, הרבה לפני הבאז הנוכחי בתחום הבינה המלאכותית והחדירה של הטכנולוגיות הללו כמעט לכל תעשייה. בתחילת דרכה, התמקדה החברה בפיתוח יישומי בינה מלאכותית למגזר הטחוני, כמו למשל פענוח תצלומי וידיאו ואוויר ואותות מכ"ם ו-LiDAR, ובהמשך התרחבה לתחום המובייל והאינטרנט. הטכנולוגיה שלה שולבה ביישום זיהוי תמונות בדפדפן מוביל בבריטניה, עם מאות מיליוני משתמשים, וכן ביישום Info-eye במרטפון Xperia Z3 של סוני, שאיפשר למשתמש, למשל, לצלם מנת אוכל ולקבל את מספר הקלוריות או לצלם בניין ולקבל עליו באופן אוטומטי אינפורמציה מוויקיפדיה.

בשנה וחצי האחרונות, ביחד עם המגמות בתעשייה כולה, החלה החברה לכוון לתחומים חדשים כמו עיר חכמה, IoT, ובעיקר תעשיית הרכב. לדברי רייכלגהוז, לבינה מלאכותית בלתי מונחית יש בתחום הרכב יתרונות משמעותיים על פני בינה מלאכותית מונחית. "הקורטקס האנושי מורכב מ-6 שכבות והוא מתאפיין בחשיבה מקבילית ושטוחה. בתגובה לאות ויזואלי כלשהו, הקורטקס מפעיל רק חלק קטן מהשכבות. לעומת זאת, במערכות ממוחשבות של למידה עמוקה, למשל כמו זו של מובילאיי, משתמשים ברשתות נוירונים של מאות שכבות והדבר מצריך כוח חישובי רב."

"המערכת שלנו לומדת לזהות ללא הנחיה וללא תיוג, פשוט מתוך ניתוח של תמונות אקראיות וזיהוי הכללות ואלמנטים משותפים שיוצרים קטגוריות. זה ההבדל בין קורטיקה למה שקורה בשוק. כמו המוח האנושי, האלגוריתמים שלנו מייצרים 'תחימה דיגיטלית' לכל סוג אובייקט, ואת החתימה הדיגיטלית הזו ניתן לשתף בקלות עם כלי רכב אחרים. הודות לכך, האלגוריתמים שלנו מסוגלים ללמוד על העולם הרבה יותר אינפורמציה – ולא רק מה שהוגדר מראש – ותוך שימוש בכוח מחשוב קטן הרבה יותר." כך למשל, רייחלגאוז מספר כי בניסוי שערכה החברה ברחובות תל אביב, האלגוריתמים ידעו ליצור באופן עצמאי לא רק קטגוריות מתבקשות כמו מכוניות, הולכי רגל ותמרורים, אלא גם אובייקטים ברקע כמו מזגנים למשל.

בשבוע שעבר הודיעה קורטיקה על שיתוף פעולה אסטרטגי ראשון בתחום הרכב, עם Renesas היפנית, אחת מחברות השבבים הגדולות בעולם בתחום הרכב. במסגרת שיתוף הפעולה, רנסאס תשלב את האלגוריתמים הייעודים שפיתחה קורטיקה למצלמות רכב במערכת-על-שבב R-Car V3H של רנסאס, המספקת יכולות ראייה ממוחשבת למערכות ADAS ונהיגה אוטונומית.

"רנסאס היא החברה המובילה בעולם מבחינת כמות השבבים לעולם הרכב. עבורנו, זהו שיתוף פעולה ראשון עם חברת שבבים. אנחנו במגעים עם עוד כמה חברות, גם Tier-1 וגם יצרניות רכב, ובהמשך נודיע על שיתופי פעולה נוספים."

לייק 7 שתף ציוץ

פורסם בקטגוריות: Automotive (https://techtime.co.il/automotive/) , אנשים (https://techtime.co.il/news/peoples) , אנשים (https://techtime.co.il/peoples-2) , בינה מלאכותית (https://techtime.co.il/%d7%91%d7%99%d7%a0%d7%94-%d7%9e%d7%9c%d7%90%d7%9b%d7%95%d7%aa%d7%99%d7%aa) , סמיקונדקטורס (https://techtime.co.il/news/semiconductors) , ראיית מכונה (https://techtime.co.il/%d7%a8%d7%90%d7%99%d7%99%d7%aa-%d7%9e%d7%9b%d7%95%d7%a0%d7%94) , ריאיונות

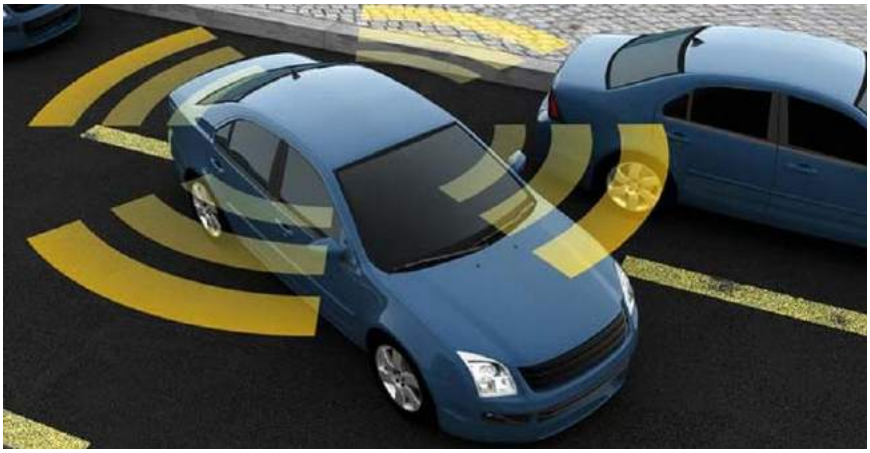
ESC

TechTime
Electronics & Technology News

Cortica Developed Autonomous AI for Autonomous Cars

January 13, 2019

Unlike AI systems like Mobileye's, Cortica's algorithms learn without advance instructions and without tagging, giving them greater accuracy and complexity. Cortica will now cooperate with Japanese company Renesas in the automotive field



Artificial intelligence technologies, such as deep learning and neural networks, are commonly compared to the way the human brain works. However, while the human brain learns about the world independently from free observation of reality, computer-sensing artificial intelligence systems do not learn, but are trained, in a guided and methodic way, to recognize only predefined objects, which significantly reduces the number of understandings they can produce from their environment.

Cortica, a company from Tel Aviv, developed an "autonomous" artificial intelligence platform, which can learn about objects in its surroundings independently and without guidance, without relying on huge databases of tagged images. According to the company, its technology offers more accurate and complex identification abilities compared to the existing systems, this while using incomparably less computing power. Last week, the company reported its first collaboration in the field of smart vehicles, with Japanese chip giant Renesas.

In a conversation with TechTime, Cortica's CEO, Igal Raichelgauz, discussed the theoretical foundations of the technology developed by the company. "Our goal was to take AI systems, which at present are very different from the human brain, and make them more similar to how the cortex works. People learn in an unsupervised manner, by looking at their environment and through our ability to recognize common elements and create representations that allow us to attribute similar objects to general categories."

Learning without a trainer

To train deep learning or neural network systems to identify a certain category of objects in the world – for example, pedestrians or traffic signs – the system must be fed millions, and sometimes billions, of examples of images presenting the target object in countless different visual contexts (angle, lighting, size, color etc.). For the computer to be able to understand what is presented in the images and build a model to allow it to identify such object after the training process, it is necessary to tag the objects appearing in each and every image. The tagging process is usually performed manually by humans. This is how Mobileye's algorithms, for example, operate in the field of computer vision for vehicles.

This method suffers from a number of disadvantages: the training process is long and costly, and often the system's level of accuracy is imperfect, leading to difficulties in identifying extreme cases. Most of all, the most significant disadvantage, which differentiates these technologies from the human brain, is that the system only learns about the predefined object, without characterizing patterns and contexts about other objects appearing in the environment.

On the other hand, in unsupervised learning, the system learns about the reality without tagging or predefinition. In fact, such algorithms analyze the raw information and look for points of similarity and difference, recurring patterns and relations between objects in space, and therefore are capable of producing many more understandings about reality, which were not predefined by the human trainer.

An autonomous car needs autonomous artificial intelligence

CEO of Cortica, Igal Raichelgauz

Cortica was established more than a decade ago, much before the current buzz in the field of artificial intelligence and the penetration of these technologies into almost every industry. In the beginning, the company focused on developing artificial intelligence applications for the defense sector, for example deciphering aerial videos and photography and radar and lidar signals, and later on expanded into the mobile and internet field. Its technology was integrated in image identification in a leading browser in the UK, with hundreds of millions of users, as well as the Info-eye application on Sony's Xperia Z3 smartphone, which allowed the user, for example, to photograph a dish of food and view the number of calories or photograph a building and automatically receive information from Wikipedia about it.

In the last year and a half, together with the general trends in the industry, the company started targeting new fields such as the smart city, IoT, and mainly the automotive industry. According to Raichelgauz,

unguided artificial intelligence possesses significant advantages, in the automotive industry, over guided artificial intelligence. "The human cortex consists of 6 layers, and is characterized by parallel and lateral thinking. In response to some visual signal, the cortex operates only a small part of the layers. On the other hand, in a computerized deep-learning system, such as that of Mobileye, neural networks with hundreds of layers are used, which requires significant computational power."

"Our system learns how to identify without guidance and without tagging, simply out of an analysis of random images and identifying generalizations and common elements that create categories. This is the difference between Cortica and what's happening in the market. Like the human brain, our algorithms create a 'digital signature' for each object type, and this digital signature can be easily shared with other vehicles. Thanks to this, our algorithms can learn a lot more information about the world – and not just what has been defined in advance – while using significantly less computing power." Thus, for example, Raichelgauz relates that in an experiment performed by the company on Tel Aviv's streets, the algorithms knew how to independently create not only obvious categories such as cars, pedestrians and traffic signs, but also background objects such as air-conditioners, for example.

Last week, Cortica announced a first strategic collaboration in the automotive field with Japanese corporation Renesas, one of the world's largest chip manufacturers in the field of vehicles. In this collaboration, Renesas will integrate the special-purpose algorithms developed by Cortica for car cameras in Renesas's R-Car V3H system-on-chip, which provides computer vision capabilities to ADAS and autonomous driving systems.

"Renesas is the world's leading company in terms of number of chips in the automotive world. For us, this is a first collaboration with a chip manufacturer. We are in contact with several more companies, both Tier-1 and automotive manufacturers, and will later on announce additional collaborations."

נספח 3

נסח רשם החברות של אינישיטיבס.

Annex 3

The Registrar of Companies extract for eNitiatives

מידע על פרטי חברה, כולל שיעבודים פעילים ולא פעילים

פרטי חברה

מספר חברה: **512836396** סטאטוס משפטי: **פעילה** תאריך רישום: **05/10/1999**

שם חברה: **אינישיטיבס אייפי בע"מ**

שם חברה באנגלית: **ENITIATIVES IP LTD**

סוג חברה: **ישראלית** סיווג חברה: **חברה פרטית** אחריות בעלי מניות: **מוגבלת**

כתובת התאגיד: **שפירא משה 17 נתניה מיקוד: 4224017**

עיקרי מטרות התאגיד: **לעסוק בסוגי עיסוק שפורטו בתקנון**

דוח שנתי אחרון הוגש לשנת: 2017 נרשם בתאריך: **31/12/2017**

הרכב הון

סוג מניה: **רגילות** ערך נקוב: **1** מטבע: **שקל חדש**

כמות מניות: **36,000** הון רשום: **36,000** הון מוקצה: **100**

בעלי מניות

1. שם: **אינישיטיבס אייפי בע"מ** מס' זיהוי: **512836396**
   סוג זיהוי: **חברה** תאריך מינוי: **07/02/2011**
   כתובת: **שפירא משה 17 נתניה מיקוד: 4224017**
   מחזיק ב: 20 מניות מסוג רגילות, בנות 1 שקל חדש, בהחזקה רגילה

2. שם: **מרקו ראובן אברהם** מס' זיהוי: **53898797**
   סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **16/09/2008**
   כתובת: **יל"ג 1 נתניה מיקוד: 4224052**
   מחזיק ב: 80 מניות מסוג רגילות, בנות 1 שקל חדש, בהחזקה רגילה

דירקטורים

1. שם: **אגסי אור** מס' זיהוי: **34721134**
   סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **30/12/2015**
   כתובת: **הרצל 111 תל אביב - יפו מיקוד: 6655510**

2. שם: **מרקו אופיר** מס' זיהוי: **39134077**
   סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **30/12/2015**
   כתובת: **פרומקין 19 נתניה מיקוד: 4228715**

3. שם: **מרקו ראובן אברהם** מס' זיהוי: **53898797**
   סוג זיהוי: **אזרח ישראלי** תאריך מינוי: **11/10/1999**
   כתובת: **יל"ג 1 נתניה מיקוד: 4224052**

אין לתאגיד חובות פעילים לתשלום אגרה שנתית

שעבודים פעילים

בשעבודים שנרשמו לפני 12/11/2017 - למצב עדכני, יש לקרוא את תיאור הבטוחה יחד עם רשימת השינויים לשעבוד.
בשעבודים שנרשמו אחרי 12/11/2017 - תיאור הבטוחה משקף את מצב הבטוחה העדכני וכולל את השינויים המאוחרים ליום רישום הבטוחה. רשימת שינויים לשעבוד מציינת את תאריכי עדכון השינויים ואת סוג השינויים שבוצעו.

שעבודים לא פעילים

מס' שעבוד: 1 תאריך רישום: **25/12/2001** תאריך יצירה: **16/09/2001** תאריך סילוק: **29/12/2005**

מהות השעבוד: **אגרת חוב**

שמות קודמים

1. תאריך השינוי: **01/12/1999** תאריך החלטה: **01/12/1999**
   שם קודם בעברית: **ר.מ.ח.ח. בע""מ**
   שם קודם באנגלית: **R.M.H.H. LTD**
2. תאריך השינוי: **14/01/2016** תאריך החלטה: **23/12/2015**
   שם קודם בעברית: **אינישיטיבס - ניו ביזנס ארכיטקטס בע"מ**
   שם קודם באנגלית: **eNitiatives - New Business Architects ltd**

שינויים בחברה

שינוי שם

1. תאריך רישום: **01/12/1999** תאריך החלטה: **01/12/1999**
2. תאריך רישום: **14/01/2016** תאריך החלטה: **23/12/2015**

אין שינויי סטאטוס

תמצית זו הוכנה מתוך המידע האגור במחשב רישום החברות ביום 10/03/2019 בשעה 09:11

נסח החברה או השותפות מהווה תמצית מידע ממאגר הנתונים הממוחשב של רשות התאגידים, הניתן כשירות לציבור, על פי מידע שהתקבל ברשות. המידע בנסח עלול להיות חסר, בלתי מדויק או בלתי מעודכן. אין להסתמך על הנתונים בנסח, משאינו מהווה אחד מהמרשמים שמנהלת רשות התאגידים על פי דין.
לבירור המידע והדיווחים שהוגשו לרשם החברות או לרשם השותפויות כנדרש בחוק, יש לעיין בתיק התאגיד. יודגש כי המידע המצוי בתיק החברה ביחס לבעלי מניות ודירקטורים בחברה, כמו גם פרטי מידע נוספים, הינו בעל אופי דקלרטיבי בלבד ואינו מהווה תחליף לעיון במרשם בעלי המניות ובמרשם הדירקטורים שמנהלת החברה, הפתוחים לעיון הציבור במשרדה הרשום.
הנסח עשוי לכלול גם תמצית מידע שהתקבל מרשויות המדינה, כדוגמת רשות האכיפה והגבייה, הכונס הרשמי ומערכת בתי המשפט, הניתן אף הוא כשרות לציבור. המידע עשוי להיות חלקי או לא מעודכן, אין להסתמך עליו ויש לפנות ולעיין במידע אצל רשות המדינה המוסמכת.

רשות התאגידים
Israeli Corporations Authority

32

COMPANY INFORMATION, INCLUDING ACTIVE AND INACTIVE PLEDGES

COMPANY DETAILS

Co. No: **512836396** Legal Status: **Active** Registration Date: **5-Oct-1999**
Co. Name: **eNitiatives IP Ltd.** [*Hebrew*]
Co. Name in English: **eNitiatives IP Ltd.**
Company Type: **Israeli** Company classification: **Private Company** Shareholder liability: **limited**
Corporate address: **17 Moshe Shapira St., Netanya** **Post-code: 4224017**
Principal Corporate Objectives: **To engage in the fields of operations listed in the articles of association**
Last Annual Report Submitted: 2017 Registration Date: **31-Dec-2017**

SHARE CAPITAL DIVISION

Share Class: **Ordinary**	Par Value: **1**	Currency: **ILS**
No. of Shares: **36,000**	Registered Share Capital: **36,000**	Issued Share Capital: **100**

SHAREHOLDERS

1. Name: **eNitiatives IP Ltd.** ID no.: **512836396**
   ID Type: **Company** Appointment Date: **7-Feb-2011**
   Address: **17 Moshe Shapira St., Netanya Post-code: 4224017**
   Holding: 20 Ordinary Shares bearing a par value of ILS 1, through ordinary holding
2. Name: **Marko Reuven Avraham** ID no.: **53898797**
   ID Type: **Israeli Citizen** Appointment Date: **16-Sep-2008**
   Address: **1 Yalag St, Netanya Post-code: 4224052**
   Holding: 80 Ordinary Shares bearing a par value of ILS 0.01, through ordinary holding

DIRECTORS

1. Name: **Or Agassi** ID no.: **34721134**
   ID Type: **Israeli citizen** Appointment Date: **30-Dec-2015**
   Address: **111 Herzl St, Tel Aviv-Yafo Post-code: 6655510**
2. Name: **Marko Ophir** ID no.: **39134077**
   ID Type: **Israeli citizen** Appointment Date: **30-Dec-2015**
   Address: **19 Fromkin Netanya Post-code 4228715**
3. Name: **Marko Reuven Avraham** ID no.: **53898797**
   ID Type: **Israeli Citizen** Appointment Date: **11-Oct-1999**
   Address: **1 Yalag St, Netanya Post-code: 4224052**

*** NO ANNUAL FEE DEBT TO THE COMPANIES REGISTRAR ***

ACTIVE PLEDGES

For pledges registered prior to 12-Nov-2017 – for the current status, the description of the collateral should be read jointly with the list of changes to the pledges.
For pledges registered after 12-Nov-2017 – the description of the collateral reflects its current status and includes changes made after registration of such collateral. The list of changes to the pledge indicates the dates of updating the changes and the types of changes made.

INACTIVE PLEDGES

רשות התאגידים
Israeli Corporations Authority

Pledge no: 1 Reg. Date: **25-Dec-2001** Creation date: **16-Sep-2001** Clearance date: **29-Dec-2005**
Nature of pledge: **loan deed**

PREVIOUS NAMES

1. Date of Change: **1-Dec-1999** Date of Resolution: **1-Dec-1999**
   Previous name in Hebrew: **R.M.H.H Ltd. [*Hebrew*]**
   Previous name in English: **R.M.H.H Ltd.**
2. Date of Change: **14-Jan-2016** Date of Resolution: **23-Dec-2015**
   Previous name in Hebrew: **eNitiatives – New Business Architects Ltd. [*Hebrew*]**
   Previous name in English: **eNitiatives – New Business Architects Ltd.**

CHANGES TO THE COMPANY

Change in Articles of Association

1. REG. DATE: **1-Dec-1999** RESOLUTION DATE: **1-Dec-1999**
2. REG. DATE: **14-Jan-2016** RESOLUTION DATE: **23-Dec-2015**

* NO CHANGE IN STATUS *

This extract was prepared on the basis of information stored on the Registrar of Companies' computers on: 10-Mar-2019 time: 9:11

This company or partnership extract constitutes a summary of the computerized data stored with the Corporations Authority, which is provided as a public service, based on information received by the authority. The information included in this extract may be incomplete, imprecise or outdated. One should not rely on the information appearing in this extract as it does not constitute a registry managed by the Corporations Authority by law.
To review the information and reports submitted to the Registrar of Companies or Registrar of Partnerships as required by law, the corporation's file ought to be reviewed. It should be emphasized that the information included in the company file with respect to company shareholders and directors as well as additional details are only of a declarative nature and does not serve as a substitute for the information maintained in the company's own registries maintained in the company's registered offices that are open to the public.
The extract may also include a summary of information received from other state authorities, for example the Enforcement and Collection Authority, the Official Receiver and the Court System, which is also provided as a public service. The information may be incomplete or outdated, it should not be relied upon and the authorized state authority should be contacted and the information held by them should be reviewed.

נספח 4

תוצאות חיפוש באתר האינטרנט של רשם החברות של מדינת ניו ג'רזי אחר M&B.

Annex 4

Search results from the website of the State of New Jersey Companies Registrar, for M&B.

STATE OF NEW JERSEY
DIVISION OF REVENUE AND ENTERPRISE SERVICES
BUSINESS NAME SEARCH

Search Types
Help (/DOR/BusinessNameSearch/Home/Help)

Business Name Search

Required Fields [*]

Search Criteria

Business Name *
M&B IP Analysts
Use "%" as a wildcard

Search → | x Cancel (/DOR/BusinessNameSearch/)

Show 10 entries

Business Name	Entity Id	City	Type	Incorporated Date
M&B IP ANALYSTS LIMITED LIABILITY COMPANY	0400634843	MORRISTOWN	LLC (Domestic Limited Liability Company)	2/12/2014

Showing 1 to 1 of 1 entries

« Previous Next »

נספח 5

תדפיס מאתר האינטרנט של ה-USPTO שמראה כי מר בן שמעון הוסמך כ-Patent Agent רק בשנת 2012.

Annex 5

USPTO website printout showing that Mr. Ben Shimon was certified as a patent agent only in 2012.

37

Data extracted on Tue May 07 08:12:24 EDT 2019

Last Name	Ben-Shimon
First Name	Michael
Middle Name	
Suffix	
Firm Name	M&B IP Analysts, LLC
Address	45 South Park Place # 262
City	Morristown
State/Province	NJ
Postal Code	07960-6834
Country	US
Primary Telephone	(973) 712-5424
Registration/Recognition Number	69,610
Status	AGENT
Date Registered as Agent	05/14/2012
US Government Employee	No
Reciprocity under 37 CFR § 11.6(c)	No
Currently Accepting New Clients	YES

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נספח 6

הסכם 2008 (ותיקונו).

Annex 6

The 2008 Agreement (and Amendment thereto).

eNitiatives®
New Business Architects Ltd.

17, Moshe Shapira Street
Netanya 42240, Israel
Phone: +972-9-889-0500
Fax: +972-9-889-0509

February 20, 2008

To:
Cortica Ltd.

Dear Sir and Madam,

This letter confirms your decision to appoint eNitiatives - New Business Architects Ltd. ("eNitiatives") to perform on behalf of Cortica Ltd. (the "Firm") the tasks outlined below.

Our engagement, which shall begin on February 20, 2008, shall include the following activities:

- Review of the current and proposed intellectual property and proposal for a protection strategy
- Interview of inventors for the purpose of understanding the inventions and establishing a plan for patent applications
- Prepare project planning on a quarterly basis, to be approved by the Firm
- Prepare the documentation, as a pseudo patent document ("PPD"), necessary for a patent attorney to create the formal patent applications
- Review and respond to patent attorney paperwork and when necessary involve inventor(s)
- Over the period of assignment respond to office actions received from the respective patent office
- Handle Firm's administrative work relative to Firm's patent applications

For avoidance of doubt it is agreed between the Firm and eNitiatives that all inventions and/or improvements to patents and inventions made by eNitiatives solely in conjunction with the subject matter of Firm's inventions, and solely within the scope of eNitiatives work with Firm, shall become the Firm's property and all rights thereto shall be promptly assigned to Firm. eNitiatives shall not have any rights nor be entitled to additional compensation, other than the compensation contemplated herein.

For the services described above, eNitiatives will be compensated, on a shared success basis as detailed in Appendix A. Value Added Tax, when applicable, will be added to all forms of compensation. Reasonable expenses up to $250 per month are allowed without prior approval from the Firm and such expenses will be paid by the Firm upon receiving the invoice from eNitiatives. Expenses exceeding $250 per month require prior approval from the Firm. All payments are due within thirty (30) days of invoice.

Firm shall indemnify and hold harmless eNitiatives and its affiliates from and against any third party's losses, claims, damages, or liabilities (or actions in respect thereof) related to or arising out of the services rendered in accordance with this Agreement, and will reimburse eNitiatives and any other party entitled to be indemnified hereunder for all expenses actually incurred, including reasonable counsel fees. Firm will not, however, be responsible for any claims, liabilities, losses, damages, or expenses to the extent that they result from eNitiatives' bad faith, willful misconduct or from gross negligence. Firm also agrees that neither eNitiatives nor any person controlling eNitiatives or any of its affiliates shall have any liability towards any third party (whether direct or indirect, in contract or tort or otherwise) in connection with the services rendered in accordance with this Agreement, except for losses, claims, damages, liabilities or expenses that result from eNitiatives' bad faith, willful misconduct or gross negligence.

The agreement will be in full force and effect until December 31, 2008, and shall renew automatically on the first day of the immediately following year for a period of an additional twelve months unless terminated in accordance with the provisions of this letter. Notwithstanding the above, the agreement will not extend automatically beyond December 31, 2010. Each party has the right to cancel this Agreement with a three (3) months prior notice in writing. Regardless of the reason or party canceling this agreement, other than termination for convenience by eNitiatives, eNitiatives shall be entitled to compensation as detailed above if (a) disclosure of the patent by a Firm's employee to eNitiatives was done prior to the date of termination, and (b) eNitiatives materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination. Upon a merger or acquisition of all, or substantially all, of Firm's assets, all pending milestones as detailed in Appendices A and B shall be deemed reached (the "**Acceleration**") and will be due immediately upon closing of such transaction (the "**Closing**"). However, it is agreed that the Acceleration shall not take place upon a written notice from the merging or acquiring entity that the Agreement will continue in full force and effect and no termination of the agreement occurs for a period of at least six (6) months after the Closing.

The parties will execute a mutual Confidential Disclosure Agreement ("**CDA**"), on or before the date of this letter agreement, which shall become an integral part of this agreement, and continue to be in full force and effect for the entire period of this Agreement and thereafter, as may be applicable. For the purpose of providing the services herein disclosure of Confidential Information under the CDA to Firm's legal counsels, patent attorneys and/or patent agents shall not be considered a disclosure to a third party. The CDA shall include and be binding upon all eNitiatives associates.

All services provided by eNitiatives under this Agreement shall be on a "best efforts" basis. It is understood and agreed by the parties that eNitiatives makes no warranties or guarantees of success in agreeing to provide said services to Firm under this Agreement, including but not limited to actual approval of patents by the PTO and/or PCT and/or any other authorized patent granting entity. Firm agrees and fully understands that eNitiatives

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and/or its employees are not patent attorneys and/or patent agents, and that Firm shall hire and retain its own competent personnel to perform the legal work associated with formal patent application.

The parties further acknowledge that eNitiatives has no signatory right or authority to assume or create any obligation of any kind, express or implied, on behalf of the Firm, other than, to the extent approved by the Firm, that which relate to the work eNitiatives performs with the appointed patent law firm designated to work on the Firm's patents. eNitiatives is an independent contractor and neither it nor its officers, directors, and employees (as applicable), shall become employees or agents of the Firm and/or subsidiaries as a result of this letter agreement, and they shall not represent or pass themselves as such.

This letter agreement shall be governed by, construed and enforced in accordance with the laws of the state of Israel, and the competent courts of Tel-Aviv shall have exclusive jurisdiction over any matter arising in connection with this Agreement.

Please indicate your agreement with this understanding by signing the enclosed copy of this letter and returning it to me.

Sincerely Yours,

Reuven Marko
General Manager
eNitiatives - New Business Architects Ltd.

Read, Understood, Agreed, and Accepted for Firm:

Signature: _____

Name: Karina Odinaev
Title: Director

Appendix A
Compensation

Subject to the terms and conditions of the Agreement, eNitiatives will be compensated by cash and equity for each milestone in the following way:

1. Cash Compensation

At each one of the following milestones eNitiatives shall be entitled to the compensation listed below (the "**Milestone Fee**"):

a. Submission of PPD to patent attorney/agent or provisional (MS 1.0) - $2,000
b. Filing of the a patent with a patent office (MS 2.0) - $2,000
c. Allowance of a patent by the respective patent office (MS 3.0) - $2,500

2. Equity Compensation

eNitiatives shall receive warrants to purchase ordinary shares of the Firm (hereinafter the "**Warrants**") expiring no earlier than 10 years from the date of issuance of the Warrants. Upon notification of reaching a milestone, the Warrants shall be issued at a strike price equal to the lower of the then: i) current common stock price; and, ii) the most recent option price offered to employees of the Firm. The number of Warrants per milestone shall be calculated as follows:

MS 1.0: 2,000 divided by the Division Value
MS 1.5: 1,000 divided by the Division Value
MS 2.0: 2,000 divided by the Division Value
MS 2.5: 1,000 divided by the Division Value
MS 3.0: 2,500 divided by the Division Value
MS 3.5: 1,250 divided by the Division Value

The "**Division Value**" shall be the price of an ordinary share as determined at the immediately preceding round of investment prior to the achievement of the respective milestone. The Warrants shall be granted to eNitiatives no earlier then the completion of the contemplated milestones but not prior to fifteen (15) days after a written notice requesting the vesting of the Warrants is sent to Firm by eNitiatives, and no more than once per calendar quarter. In the case of a merger or acquisition of all or substantially all of the Firm's assets, all outstanding Warrants, regardless of reaching a milestone, shall be considered to have reached their milestone.

TERMS

For each patent that, subsequent to a first filing with one patent office (e.g., PTO), is filed with another patent office (e.g., PCT), a compensation of 50% (fifty percent) of the respective Milestone Fee shall be paid to eNitiatives (MS 2.5). For avoidance of doubt, filing with the PCT will be awarded only once for milestone (b), and subsequently for each country were allowance is granted.

If Firm elects to first submit a provisional application, eNitiatives shall be entitled to a Milestone Fee upon submission of the provisional to the PTO. The first PPD prepared from a provisional, originally prepared by eNitiatives, for eventual formal filing with the PTO will entitle eNitiatives to a compensation at a rate of 50% (fifty percent) of the PPD Milestone Fee (MS 1.5). All subsequent PPDs derived from a provisional shall be compensated at the full rate of a Milestone

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Fee. The first filing of a PPD with a patent office will result in a filing Milestone Fee (MS 2.0) and any subsequent filing with any and each patent office, but not the derivative national phase of a PCT application, shall be compensated at a rate of 50% (fifty percent) of the filing Milestone Fee (MS 2.5). A first allowance of a patent by a patent office will result in an allowance Milestone Fee (MS 3.0) and any and each subsequent allowance of the patent by another patent office shall be compensated at a rate of 50% (fifty percent) of the allowance Milestone Fee (MS 3.5). Divisional patents will be charged for MS 2.0 and MS 3.0; Continuation patents will be charged for MS 1.5, MS2.0, and MS 3.0; and, continuation-in-part (CIP) patents will be charged for MS 1.0, MS 2.0 and MS 3.0.

PAGES 02-22-2008 10:39

eNitiatives
New Business Architects Ltd.

17, Moshe Shapira Street
42240 Netanya, Israel
Phone: 09-889-0500
Fax: 09-889-0509
51-283679-6 .o.n

1 September, 2008

Igal Raichelgauz
Cortica Ltd.
Hatamar 30A/6
34325 Haifa

Dear Igal,

This letter confirms the following changes to the Agreement between our companies as follows:

1. The following passage:

"For the services described above, eNitiatives will be compensated, on a shared success basis as detailed in Appendix A. Value Added Tax, when applicable, will be added to all forms of compensation. Reasonable expenses up to $250 per month are allowed without prior approval from the Firm and such expenses will be paid by the Firm upon receiving the invoice from eNitiatives. Expenses exceeding $250 per month require prior approval from the Firm. All payments are due within thirty (30) days of invoice."

shall be replaced by:

"For the services described above, eNitiatives will be compensated, on a shared success basis as detailed in Appendix A. Value Added Tax, when applicable, will be added to all forms of compensation. Expenses of $150 per milestone, covering travel to and from your location, faxes, phone calls, parking, and the likes, but not travel outside of Israel which shall be paid separately, will be paid by the Firm upon receiving the invoice from eNitiatives. Such expenses shall not exceed $500 per calendar quarter. All payments are due within thirty (30) days of invoice."

2. In appendix A, section 1, the following passage:

"At each one of the following milestones eNitiatives shall be entitled to the compensation listed below (the "**Milestone Fee**"):
a. Submission of PPD to patent attorney/agent or provisional (MS 1.0) - $2,000
b. Filing of the a patent with a patent office (MS 2.0) - $2,000
c. Allowance of a patent by the respective patent office (MS 3.0) - $2,500"

shall be replaced by the following passage:

"At each one of the following milestones eNitiatives shall be entitled to the compensation listed below (the "Milestone Fee"):

a. Submission of PPD to patent attorney/agent or provisional (MS 1.0) - $2,500
b. Filing of the a patent with a patent office (MS 2.0) - $2,500
c. Allowance of a patent by the respective patent office (MS 3.0) - $3,000"

3. In appendix A, section 2, the following passage:

"MS 1.0: 2,000 divided by the Division Value
MS 1.5: 1,000 divided by the Division Value
MS 2.0: 2,000 divided by the Division Value
MS 2.5: 1,000 divided by the Division Value
MS 3.0: 2,500 divided by the Division Value
MS 3.5: 1,250 divided by the Division Value"

shall be replaced by the following passage:

"MS 1.0: 2,500 divided by the Division Value
MS 1.5: 1,250 divided by the Division Value
MS 2.0: 2,500 divided by the Division Value
MS 2.5: 1,250 divided by the Division Value
MS 3.0: 3,000 divided by the Division Value
MS 3.5: 1,500 divided by the Division Value"

All other terms and conditions of the Agreement shall remain in full force and effect. Please indicate your agreement with these amendments by signing the enclosed copy of this letter and returning it to me.

Sincerely Yours,

Reuven Marko
General Manager
eNitiatives - New Business Architects Ltd.

Read, Understood, Agreed, and Accepted for Firm:

Signature: _____

COMICA Ltd. 513975250
Hahalia 30A, Haifa, Israel
Tel: 972-4-8571294
Fax: 972-4-8571294

Name: Kamran Khan
Title: COO & VP Product Development

נספח 7

הסכם 2011.

Annex 7

The 2011 Agreement.

Heskia-Hacmun
Law Firm

Tel Aviv, January 28, 2011

Igal Raichelgauz – Ceo & Co-Founder
Cortica Ltd.
Hatamar 30A/6
34325 Haifa

Re: Letter of Engagement

Dear Igal,

We are glad that Cortica Ltd. (hereinafter the Signee) has decided to engage with Heskia-Hacmun Law Firm ("Heskia-Hacmun") and would like to set forth the basic terms of our engagement as described in this letter and attachment thereto.

Scope of Engagement

Our firm shall provide you with Intellectual Property (IP) related legal services as well as other matters as shall be explicitly requested by you from time to time. For information about our IP service and methods please see Attachment I (The Intellectual Property Catalyst Services).

Fees and Expenses

The price of our IP services described in Attachment I shall be on a milestone basis as set forth in Attachment I, including a flat rate for expenses. For any other services that shall be explicitly requested by Signee from us, we will apply our hourly rates (US$ 500 for partners, US$ 450 for technical advisors, US$ 220 for associates and US$ 90 for legal trainees). Expenses related to the other services that are in excess of $500 will be brought to your prior approval.

VAT at the prevailing rate shall be added to all forms of payments unless our auditors (Deloitte) advise us otherwise.

Payments shall be made within 30 days (preferably by way of wire transfer or other electronic means) following the issuance of our electronic invoice. Upon receipt of payment, we will issue and mail to you a corresponding original tax invoice/receipt.

K.O.

Heskia-Hacmun
Law Firm

Termination of Engagement

You may terminate our engagement at any time without providing any cause. Upon receipt of termination notice we shall cease any activities in your matter and, if required, act as shall be required by you in order to transfer the representation to another law firm as shall be designated by you. You will be invoiced for any remaining outstanding debt related to this engagement and such shall be paid by you according to the payment terms.

Jurisdiction & Liability

The sole and exclusive jurisdiction concerning any claims against our firm and/or any of its individuals shall be with the authorized courts of Tel-Aviv, Israel. Any claim concerning our professional liability shall be limited to the extent of our firm's professional liability insurance coverage.

If the above is acceptable, please sign below and return to us.

Very truly yours,

Amos Hacmun, Adv.
Heskia-Hacmun Law Firm

We have read the above and agree to it:

1/3/2021
Date

Name: Karina Odinaev
Title: VP Products
Signee Name: Cortica Ltd.
Signee ID: 51-397525-0

Heskia-Hacmun Law Firm

Attachment I

The IP Catalyst Services (IPCS)

The IPCS is a service that provides front-end interface between the inventors and the back-end service of formal patent applications and shall include the following activities and milestones:

- Review of the current and proposed intellectual property and proposal for a protection strategy using the patent pending IP Scan and IP Audit processes and reports
- Interview of inventors for the purpose of understanding the inventions and establishing a plan for patent applications
- Prepare the invention disclosure documentation for the relevant patent application proceeding
- Management of foreign patent attorneys to commence the preparation of the patent applications and proceedings in various jurisdictions
- Respond to office actions received from the Israel patent office and assist in response in other jurisdictions
- Handle the client's administrative work associated with the patent applications

For the avoidance of doubt, it is agreed that all inventions and/or improvements to patents made by the firm solely in conjunction with the subject matter of Signee's inventions, and solely within the scope of firm's work with Signee, shall become Signee's property and all rights thereto shall be promptly assigned to Signee, and the firm shall not be entitled to additional compensation, other than the compensation contemplated herein.

The IPCS are paid for on a milestone basis as follows:

MS 1.0 – Submission of drafts to foreign patent attorney/agent or filing a provisional patent application – US$ 2,500;
MS 1.5 – restart of a provisional application for preparation for filing – US$ 1,250;
MS 2.0 – filing of a non-provisional patent application in a first jurisdiction – US$ 2,500;
MS 2.5 – filing on the non-provisional patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250;
MS 3.0 – allowance of a patent application in a first jurisdiction – US$ 3,000;
MS 3.5 – allowance of a patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250.
IP Audit – no more than once per year a charge equivalent to a MS 1.0 charge.

Gaon House, 6 Kaufman St., Tel-Aviv 68012
tel: +927-3-6081122 fax: +972-3-6081123 main@hh-law.co.il www.hh-law.co.il

N.O.

- A Divisional patent begins with a MS 2.0 charge;
- A Continuation patent begins with a MS 1.5 charge;
- A continuation-in-part (CIP) patent begins with a MS 1.0 charge.

Special condition. Whereas the ICPS further requires consulting and resorting to eNitiatives – New Business Architects Ltd. (the Third Party) having industry specific knowledge which aims to increase the business value of the inventions, you agree that such third party will be entitled to compensation in the form of stock and/or options to purchase shares of Common Stock of your company, on a per milestone basis, in an amount equal to the cash value of each such milestone divided by the then known price per share, with an exercise price equal to such price per share and fully vested. Such compensation shall be granted no more than twice per calendar year and at any investment round.

Notwithstanding termination of this Agreement for any reason, options and/or payments as detailed above shall still be granted and/or paid if (a) disclosure of the patent by Signee and/or a Signee's employee to the firm was made prior to the date of termination, and (b) the firm materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination.

Upon a merger or acquisition of all, or substantially all, of Signee assets (an "M&A"), all pending milestones as detailed above shall be deemed completed and therefore options and/or payments will be due immediately upon closing of the M&A, unless the merging or acquiring entity provides written notice that this Agreement will continue in full force and effect and no termination of this Agreement shall occur for a period of at least six (6) months after the closing of the M&A.

Expenses for the IPCS (e.g., local travel, search, telephone, fax, parking, etc.) shall be charged at an agreed upon flat rate of US$ 150 per milestone.

נספח 8

תיקון להסכם 2011 מיום 28.2.2013.

Annex 8

Amendment to the 2011 Agreement, dated February 28, 2013.

Heskia-Hacmun
Law Firm

Tel Aviv, February 27, 2013

Ron Lev – CEO
Cortica Ltd.
7 Zabotinski
52520 Ramat Gan

Reuven Marko – GM
eNitiatives – New Business Architects Ltd.
17, Moshe Shapira Street
42204 Netanya

Re: Letter of Engagement- Amendment

Dear Ron and Reuven,

Subsequent to the recent discussions, and for the sake of good order, we would like to confirm that the Third Party mentioned under "Special Condition" on Appendix I, is eNitiatives New Business Architects Ltd. ("eNitiatives").

Furthermore, subject to the below acceptance by both Cortica Ltd. and eNitiatives, we agree to have the Letter of Engagement modified so that an overall cap of 0.5% of the outstanding shares of Cortica shall be set for the holding of eNitiatives in Cortica and that the "then known price per share" shall be fixed at US$ 65 per share for any shares not issued to eNitiatives to date, and be in effect until such time that the "known price per share" is determined at a new round of investment into Cortica.

To confirm your acceptance of the above, please sign and return this letter to us.

Very truly yours,

Amos Hacmun, Adv.
Heskia-Hacmun Law Firm

We have read the above and agree to it:

_____ _____

Name:_____
Title: _____
Cortica Ltd.
Date: _____

Name: Reuven Marko
Title: General Manager
eNitiatives – New Business Architects Ltd.
Date: February 27, 2013

נספח 9

המייל של עו"ד אגסי מיום 21.12.2015 על צרופותיו וכן מייל התזכורת מיום 27.12.2015.

Annex 9

Adv. Agassi's email dated December 21, 2015 and attachments thereto, as well as the reminder email dated December 27, 2015.

From: Or Agassi
Sent: Sunday, December 27, 2015 9:14 AM
To: 'igal raichelgauz'
Cc: Reuven Marko; Asher Avital
Subject: RE: New engagement

Hi Guys,
Can we please take care of this? The agreement matches our older one beside the change of our entity.
Thanks and best regards,
Or

From: igal.raichelgauz@gmail.com [mailto:igal.raichelgauz@gmail.com] **On Behalf Of** igal raichelgauz
Sent: Monday, December 21, 2015 9:33 PM
To: Or Agassi
Cc: Reuven Marko; Asher Avital
Subject: Re: New engagement

Thanks
+Asher

On Monday, December 21, 2015, Or Agassi <Or@hh-law.co.il> wrote:

Dear Igal,
It was a pleasure discussing with you the changes that are going to happen in the providing of IP services through eNitiatives, going forward. As part of that we are pleased to send you our agreement that basically follows the text of the previous agreement, but also include a confidential disclosure clause and agreement. In addition, there is attached a cease of services letter to be sent to the Heskia Hacmun Law Firm and the list of outstanding invoices.
According to our separation agreement with HH Law we cannot begin our services without these documents signed by you. If you have any questions please do not hesitate to be in touch with us at your earliest convenience. We will be in touch with you personally to follow up on this. As a reminder, HH law will provide the IP service to your company only up to 31/Dec/2015.
Sincerely Yours,
Or

תאריך: _____

לכבוד
חזקיה – חכמון, משרד עו"ד
קויפמן 6, ת"א 6801298

הנדון: סיום התקשרות

בהמשך לשיחות בינינו ולסיכום בדבר סיום ההתקשרות, הרינו להעלות על הכתב את הדברים כלדקמן:

1. החל ממועד מכתב זה ייפסק מתן השרותים על ידכם לחברתנו.

2. אנו מאשרים את החשבונות המפורטים ברצ"ב ונדאג לשלמם למשרדכם עד לא יאוחר מיום 30.3.2016.

3. אתם תעבירו את כל המסמכים וסטטוס הטיפול לנותן שירותים חדש אשר פרטיו יימסרו לכם על ידינו בתוך 7 ימים ממועד מכתבנו זה.

4. אנו מאשרים בזאת כי אין ולא תהיה לנו כל טענה ו/או תביעה בקשר עם איכות השירותים המקצועיים אשר נתנו לנו על ידכם.

5. לאחר תשלום החשבונות המפורטים בסעיף 2 לא נהיה חייבים לכם כל תשלום נוסף ובכלל זה בגין אבני דרך במועד אישור פטנטים אשר טופלו על ידכם.

בכבוד רב,

_____

הרינו מאשרים את האמור,

_____

55

Date: _____

To:

Hezekiah-Hachmon Law Firm

6 Koifman Street, Tel Aviv 6801298

Re: Termination of Engagement

Further to our conversations and our understanding on ending the engagement, we hereby put the following matters in writing:

1. Starting from the date of this letter, the provision of your services to our company shall cease.

2. We approve the bills detailed in the attachment and shall ensure these are paid to your firm by no later than March 30, 2016.

3. You shall send all documents and status of work to a new service provider, whose details we shall deliver to you within 7 days of the date of this letter.

4. We hereby confirm that we have no and shall have no argument and/or claim with respect to the quality of the professional services that you have provided to us.

5. Following the payment of the bills detailed in Section 2, we shall owe you no additional payment, and as part of this for any milestones on the date of approval of patents that you worked on.

Sincerely,

_____

We hereby confirm the above,

_____

Hezekiah-Hachmon Law Firm

6 Koifman Yehezkel Street, Tel Aviv 6801298, Tel. 03-6081122, fax: 03-60811223

Printing date: December 21, 2015
Our ref. no: 1225

To:

Cortica Ltd.,12 David Khakhami St., 1st Floor
Tel Aviv

Dear Sir or Madam,

Re: **Reminder of Unpaid Transaction Invoices**

According to our records, the following bill/s sent to you have not yet been paid.

Bill	Date	File no.	File name	Additional identification	Notes	Bill amount	Paid on account	Outstanding balance
3996	05/05/2015	1225/68	COR-072			$3,127.00	$1,590.63	$1,536.37
3997	05/05/2015	1225/69	COR-092			$3,127.00		$3,127.00
4033	15/06/2015	1225/6	COR-026	A SYSTEM AND METHODS THEREOF FOR VISUAL ANALYSIS OF AN IMAGE ON A WEB-PAGE AND MATCHING AN ADVERTISEMENT THERETO		$3,717.00		$3,717.00
4087	28/07/2015	1225/88	COR-115			$3,690.00		$3,690.00
4097	14/08/2015	1225/76	COR-098			$3.127.00		$3,127.00
4098	14/08/2015	1225/77	COR-099			$3,127.00		$3,127.00
4100	14/08/2015	1225/79	COR-102			$3,127.00		$3,127.00
4101	14/08/2015	1225/80	COR-112			$3.127.00		$3,127.00
4108	14/08/2015	1225/78	COR-101			$3,127.00		$3,127.00
4111	23/08/2015	1225/24	COR-019			$3,717.00		$3,717.00
4128	06/09/2015	1225/83	COR-093			$3,127.00		$3,127.00
4129	06/09/2015	1225/84	COR-107			$3,127.00		$3,127.00
4137	13/09/2015	1225/10	COR-027			$3,717.00		$3,717.00
4150	25/09/2015	1225/92	COR-123			$3,127.00		$3,127.00
4172	14/10/2015	1225/34	COR-045			$3,685.50		$3,685.50
4176	14/10/2015	1225/26	COR-025			$4,387.50		$4.387.50
4194	29/10/2015	1225/90	COR-116			$3.685.50		$3.685.50
4205	24/11/2015	1225/93	COR-122			$3,100.50		$3,100.50
4206	24/11/2015	1225/16	COR-040			$3,685.50		$.3.685.50
4234	20/12/2015	1225/94	COR-124			$3.100.50		$3,100.50
4237	20/12/2015	1225/95	COR-125			$3,100.50		$3,100.50
4240	20/12/2015	1225/96	COR-120			$3,230.50		$3,230.50
					Total in $	**$74,087.00**	**$1,590.63**	**$72,496.37**

E&OE

If the above bills have already been paid in the meanwhile, please update our office.

Sincerely,

חזקיה - חכמון, משרד עו"ד

קויפמן יחזקאל 6 תל אביב 6801298, טל' 03-6081122 פקס 03-6081123

תאריך הדפסה : 21/12/2015
מספרנו : 1225

לכבוד
Cortica Ltd
12 David Khakhami St. 1st Floor
Tel Aviv

א.ג.נ.,

הנדון : תזכורת לחשבונות עסקה שלא שולמו

עפ"י רישומינו, טרם שולם/ו החשבון/ות שנשלח/ו אליכם, המפורט/ים מטה,

חשבון	תאריך	מס' תיק	שם התיק	זיהוי נוסף	הערות	סכום החשבון	שולם ע"ח	יתרה לתשלום
3996	05/05/2015	1225/68	COR-072			$3,127.00	$1,590.63	$1,536.37
3997	05/05/2015	1225/69	COR-092			$3,127.00		$3,127.00
4033	15/06/2015	1225/6	COR-026		A SYSTEM AND METHODS THEREOF FOR VISUAL ANALYSIS OF AN IMAGE ON A WEB-PAGE AND MATCHING AN ADVERTISEMENT THERETO	$3,717.00		$3,717.00
4087	28/07/2015	1225/88	COR-115			$3,690.00		$3,690.00
4097	14/08/2015	1225/76	COR-098			$3,127.00		$3,127.00
4098	14/08/2015	1225/77	COR-099			$3,127.00		$3,127.00
4100	14/08/2015	1225/79	COR-102			$3,127.00		$3,127.00
4101	14/08/2015	1225/80	COR-112			$3,127.00		$3,127.00
4108	14/08/2015	1225/78	COR-101			$3,127.00		$3,127.00
4111	23/08/2015	1225/24	COR-019			$3,717.00		$3,717.00
4128	06/09/2015	1225/83	COR-093			$3,127.00		$3,127.00
4129	06/09/2015	1225/84	COR-107			$3,127.00		$3,127.00
4137	13/09/2015	1225/10	COR-027			$3,717.00		$3,717.00
4150	25/09/2015	1225/92	COR-123			$3,127.00		$3,127.00
4172	14/10/2015	1225/34	COR-045			$3,685.50		$3,685.50
4176	14/10/2015	1225/26	COR-025			$4,387.50		$4,387.50
4194	29/10/2015	1225/90	COR-116			$3,685.50		$3,685.50
4205	24/11/2015	1225/93	COR-122			$3,100.50		$3,100.50
4206	24/11/2015	1225/16	COR-040			$3,685.50		$3,685.50
4234	20/12/2015	1225/94	COR-124			$3,100.50		$3,100.50
4237	20/12/2015	1225/95	COR-125			$3,100.50		$3,100.50
4240	20/12/2015	1225/96	COR-120			$3,230.50		$3,230.50
					סיכומים ב $	**$74,087.00**	**$1,590.63**	**$72,496.37**

ט.ל.ח.
אם בינתיים שולמו החשבונות הנ"ל, נודה על עדכון משרדנו.

בכבוד רב,

eNitiatives
Where IP matters™

Tel Aviv, December 21, 2015

Cortica Ltd.
Mr. Igal Raichelgauz – CEO

Re: Letter of Engagement

Dear Igal,

We are glad that Cortica Ltd. (hereinafter the "Signee") has decided to engage with eNitiatives IP Ltd. (hereinafter the "Firm") and would like to set forth the basic terms of our engagement as described in this letter of engagement (hereinafter the "LOE") that includes attachments thereto.

Scope of Engagement

The firm shall provide the Signee with Intellectual Property (IP) related services as well as other matters as shall be explicitly requested by you from time to time, including the transfer of cases previously handled by Heskia Hacmun Law Firm. Information regarding our IP Catalyst Services is as provided in Attachment I, which is an integral part of the LOE.

Fees, Expenses and Payment Terms

The price of our IP Catalyst services shall be on a milestone basis as set forth in Attachment I, including a flat rate for expenses. For any other services that shall be requested by Signee and for which there is no specific agreed upon service fee, we shall charge Signee based on the actual time spent on handling the matter in accordance with our hourly rates.

VAT at the prevailing rate shall be added to all forms of payments unless the Firm's auditors advise otherwise.

Payments shall be made within 30 days (preferably by way of wire transfer or other electronic means) following the issuance of our Firm's electronic invoice. Upon receipt of payment, the Firm will issue and mail to the Signee a corresponding original tax invoice/receipt.

Confidentiality

Consistent with their commitment to confidentiality, the parties agree that the Confidential Disclosure Agreement ("**CDA**") of Attachment II, is effective as of the date of this LOE, and is an integral part of this LOE. For the purpose of providing the services herein disclosure of Confidential Information, covered by the CDA, to Firm's legal counsels, patent attorneys and/or patent agents shall not be considered a disclosure to a third party and is specifically permitted. The CDA shall include and be binding upon all the Firm's employees.

Termination of Engagement

Signee may terminate the LOE at any time without providing any cause. Upon receipt of a written termination notice the Firm shall cease any activities in Signee's matters and, if required, act as shall be required by Signee in order to transfer the representation to another firm as shall be designated by Signee. Signee will be invoiced for any remaining outstanding debt, including acceleration as may be applicable, related to this LOE and such shall be paid by Signee according to the payment terms.

Jurisdiction & Liability

The sole and exclusive jurisdiction concerning any claims against the Firm and/or any of its individuals shall be with the authorized courts of Tel-Aviv, Israel. Any claim concerning the Firm's professional liability shall be limited to the extent of the Firm's professional liability insurance coverage or the total amount actually paid by Signee to the Firm, whichever is higher.

If the above is acceptable, please sign below and return to us.

Very truly yours,

Or Agassi, Adv.
eNitiatives IP Ltd.

I have read the above and agree to it:

_____ _____

Signee: _____ Date

ID: _____

Attachment I

The IP Catalyst Services (IPCS)

The IPCS is a service that provides front-end interface between the inventors and the back-end service of formal patent applications and shall include the following activities and milestones:

- Review of the current and proposed intellectual property and proposal for a protection strategy using the patent pending IP Scan and IP Audit processes and reports
- Interview of inventors for the purpose of understanding the inventions and establishing a plan for patent applications
- Prepare the invention disclosure documentation for the relevant patent application proceeding
- Management of foreign patent attorneys to commence the preparation of the patent applications and proceedings in various jurisdictions
- Respond to office actions received from the Israel patent office and assist in response in other jurisdictions
- Handle the client's administrative work associated with the patent applications

For the avoidance of doubt, it is agreed that all inventions and/or improvements to patents made by the firm solely in conjunction with the subject matter of Signee's inventions, and solely within the scope of firm's work with Signee, shall become Signee's property and all rights thereto shall be promptly assigned to Signee, and the firm shall not be entitled to additional compensation, other than the compensation contemplated herein.

The lPCS are paid for on a milestone basis as follows:

MS 1.0 – Submission of drafts to foreign patent attorney/agent or filing a provisional patent application – US$ 2,500;
MS 1.5 – restart of a provisional application for preparation for filing – US$ 1,250;
MS 2.0 – filing of a non-provisional patent application in a first jurisdiction – US$ 2,500; MS 2.5 – filing on the non-provisional patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250;
MS 3.0 – allowance of a patent application in a first jurisdiction – US$ 3,000;
MS 3.5 – allowance of a patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250.
IP Audit – no more than once per year a charge equivalent to a MS 1.0 charge.

- A Divisional patent begins with a MS 2.0 charge;
- A Continuation patent begins with a MS 1.5 charge;
- A continuation-in-part (CIP) patent begins with a MS 1.0 charge.

Special Condition. Where as the IPCS further requires consulting and resorting to industry and business specific knowledge which aims to increase the business value of the inventions, you agree that eNitiatives Business Consulting (herein after "EBC") will provide such services and will be entitled to compensation in the form of stock and/or options to purchase shares of Common Stock of Signee, on a per milestone basis, in an amount equal to the cash value of each such milestone divided by the then known price per share, with an exercise price that is the lesser of the known price per share and the option price given to employees of signee, and fully vested

(the "Equity"). Such Equity shall be granted no more than twice per calendar year and at any investment round. Such Equity shall remain exercisable, regardless of any termination, until the first to occur of: the closing of a merger of the Signee in or with another entity, the sale of all or substantially all of the shares or assets of the Signee, and the closing of an initial public offering of the Signee's securities.

Terms of Termination. Notwithstanding termination of this Agreement for any reason, Equity and/or payments for all milestones as detailed above shall still be granted and/or paid if (a) disclosure of the patent by Signee and/or a Signee's employee to the firm was made prior to the date of termination, and (b) the firm materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination.

Upon a merger or acquisition of all, or substantially all, of Signee assets (an **"M&A"**), all pending milestones as detailed above shall be deemed completed and therefore options and/or payments will be due immediately upon closing of the M&A, unless the merging or acquiring entity provides written notice that this Agreement will continue in full force and effect and no termination of this Agreement shall occur for a period of at least six (6) months after the closing of the M&A.

Expenses. Expenses for the IPCS (e.g., local travel, search, telephone, fax, parking, etc.) shall be charged at an agreed upon flat rate of US$ 150 per milestone.

Attachment II

CONFIDENTIAL DISCLOSURE AGREEMENT (CDA)

In order to protect certain confidential information, the parties of this LOE agree that:

1. Either Party may be a disclosing Party or a receiving Party.
2. Confidential Information (CI): means all written information presented by a disclosing Party related to the business of the disclosing Party and business opportunities under consideration by the disclosing Party, including, without limitation, business plans, business models, pricing and cost data, market research, customer and supplier information, information concerning employees and independent contractors, proprietary software and methods, and information concerning proprietary inventions and technologies during the Disclosure Period. The CI generally pertains to inventions of the Signee which it may wish to protect by submission of patent applications and confidential business information of the Signee.
3. The use of the CI is for the purpose of the IP Catalyst services provided by the Firm. Signee fully understands that the Firm may retain a variety of employees, including but not limited to attorneys, patent agents and/or attorneys, as well as any other personnel, technical or otherwise deemed necessary to perform its IP Catalyst services, at its sole discretion.
4. Confidentiality Period: Five (5) years from disclosure date.
5. Disclosure Period: For as long as the LOE is in full force and effect.
6. Standard of Care: Recipient shall protect the disclosed CI by using the same degree of care, but no less than a reasonable degree of care, to prevent unauthorized use, dissemination, or publication of the CI as Recipient uses to protect its own CI of a like nature. CI will be provided to persons only on a need to know basis in connection with the use defined in this CDA. The Firm may disclose such CI to a third party patent attorney and/or patent agent appointed by Signee and/or by the Firm.
7. Marking: Recipient's obligations shall only extend to CI that is described in Paragraph 2, and that (a) comprises specific materials individually listed in paragraph 2; or (b) is marked as confidential at the time of disclosure; or (c) is unmarked (e.g., orally disclosed) but treated as confidential at the time of disclosure, and is designated as confidential in a written memorandum sent to Recipient's primary representative within thirty days of disclosure, summarizing the CI sufficiently for identification.
8. Exclusions: This Agreement imposes no obligation upon Recipient with respect to information that (a) was in Recipient's possession before receipt from Discloser; (b) is or becomes a matter of public knowledge through no fault of Recipient; (c) is rightfully received by Recipient from a third party without a duty of confidentiality; (d) is disclosed by Discloser to a third party without a duty of confidentiality on the third party; (e) was independently developed by Recipient; (f) is disclosed under operation of law; or (g) is disclosed by warrant. Each Discloser warrants that it has the right to make the disclosures to Recipient.
9. Rights: Neither party acquires any intellectual property rights under this CDA except the limited rights necessary to carry out the purposes set forth in paragraph 3. This CDA shall not restrict reassignment of Recipient's employees. Written data delivered by Discloser to Recipient shall remain the property of Discloser, and at the end of the Confidentiality Period, shall be returned to the Discloser upon written request, or destroyed at the Discloser's option.
10. This CDA does not create any agency or partnership relationship.
11. All additions or modifications to this CDA must be made in writing and must be signed by both parties.
12. This CDA is made under, and shall be constructed according to, the laws of Israel.

חזקיה - חכמון, משרד עו"ד

קויפמן יחזקאל 6 תל אביב 6801298, טל' 03-6081122 פקס 03-6081123

תאריך הדפסה: 21/12/2015

חזקיה - חכמון, משרד עו"ד

נספח 10

העתק המייל של מר אביטל מיום 9.3.2016.

Annex 10

A copy of Mr. Avital's email dated March 9, 2016.

64

From: Asher Avital
To: or@enitiatives.biz
Subject: FW: FW: Cortica Patent costs for 2015
Date: Wednesday, March 9, 2016 4:49:42 PM
Attachments: Cortica-HH-Updated-Engagement Letter-Feb-13-cleanB.pdf

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Or,
Please make sure that all agreements are reflected in the new one. Below are what we have found so far…

The attached cap was not included in the new agreement.

Also, the email from February 2015 only stated that all CIP (continuation-in-part) patents would start at milestone 2.0, but did not change any other expenses of the agreement.
(In the past year, I did confirm that all patents were charged at 2.0, except for COR-120 which was charged at milestone 1.0.)

The following are key differences in the new agreement:

- Hourly rates not included.
- Stipulation that expenses over $500 will be approved is not noted.
- In case of agreement term, outstanding debt payment may be accelerated. (was not included in last agreement)
- Liability - in case of claim - ceiling change for liability to be limited to eNitiatives professional liab insurance coverage or total amount actually paid by Cortica, whichever is higher.
- Milestone 3.5 increased to $1,500 (from $1,250)
- CIP patent should start at 2.0 as noted in your email below (currently stated as starting at 1.0).
- Previous agreement stated that IP Audits would occur no more than once per year at a charge equivalent of MS 1.0 (The IP Audit is not included in the new agreement)
- Price per share is noted as lesser of then known price per share or exercise price given to employees. The attached cap is not mentioned.
- New stipulation has been added regarding exercise of options. (shall remain exercisable regardless of term in case of closing, merger, sale of all assets, closing of IPO…). This stipulation was not in prior agreement.
- Confidentiality agreement has been added. Looks ok - (5 year term).

Thx

On Mon, Mar 7, 2016 at 4:47 PM, Asher Avital <asher.avital@cortica.com> wrote:

> *Asher Avital*
> CFO

Heskia-Hacmun
Law Firm

Tel Aviv, February 27, 2013

Ron Lev – CEO
Cortica Ltd.
7 Zabotinski
52520 Ramat Gan

Reuven Marko – GM
eNitiatives – New Business Architects Ltd.
17, Moshe Shapira Street
42204 Netanya

Re: Letter of Engagement- Amendment

Dear Ron and Reuven,

Subsequent to the recent discussions, and for the sake of good order, we would like to confirm that the Third Party mentioned under "Special Condition" on Appendix I, is eNitiatives New Business Architects Ltd. ("eNitiatives").

Furthermore, subject to the below acceptance by both Cortica Ltd. and eNitiatives, we agree to have the Letter of Engagement modified so that an overall cap of 0.5% of the outstanding shares of Cortica shall be set for the holding of eNitiatives in Cortica and that the "then known price per share" shall be fixed at US$ 65 per share for any shares not issued to eNitiatives to date, and be in effect until such time that the "known price per share" is determined at a new round of investment into Cortica.

To confirm your acceptance of the above, please sign and return this letter to us.

Very truly yours,

Amos Hacmun, Adv.
Heskia-Hacmun Law Firm

We have read the above and agree to it:

_____ _____

Name:_____
Title: _____
Cortica Ltd.
Date: _____

Name: Reuven Marko
Title: General Manager
eNitiatives – New Business Architects Ltd.
Date: February 27, 2013

נספח 11

העתק מייל התשובה של עו"ד אגסי מיום 10.3.2016 יחד עם הנוסח המתוקן.

Annex 11

A copy of Adv. Agassi's response email dated March 10, 2016, together with the amended version.

From: or@enitiatives.biz
To: asher.avital@cortica.com
Subject: FW: Cortica Patent costs for 2015
Date: Monday, March 14, 2016 5:54:56 PM
Attachments: COR-ENI-Agreement-2016.docx

Hi Asher,

Just a quick follow up.

Thanks,
Or

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Thursday, March 10, 2016 2:59 PM
To: asher.avital@cortica.com
Subject: FW: Cortica Patent costs for 2015

Hi Asher,

Please see below and in the attached. I am meeting Igal and Karina at your offices today at 5pm and it would be great if we can execute then.

Thanks,
Or

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Wednesday, March 9, 2016 4:50 PM
To: or@enitiatives.biz
Subject: FW: FW: Cortica Patent costs for 2015

Or,
Please make sure that all agreements are reflected in the new one. Below are what we have found so far…

The attached cap was not included in the new agreement. OA: The overall cap of 0.5% is and remains agreed upon. The US$65 is not relevant any more as since that time there were rounds of investment in Cortica and the actual price at those rounds should be used.

Also, the email from February 2015 only stated that all CIP (continuation-in-part) patents would start at milestone 2.0, but did not change any other expenses of the agreement.
(In the past year, I did confirm that all patents were charged at 2.0, except for COR-120 which was charged at milestone 1.0.) OR: Made the requested changes. We agreed to that every continuation and/or CIP subsequent to a continuation and/or CIP shall start at MS 2.0.

The following are key differences in the new agreement:

Hourly rates not included. OA: Added.

- Stipulation that expenses over $500 will be approved is not noted. OA: Added.
- In case of agreement term, outstanding debt payment may be accelerated. (was not included in last agreement) OA: It was included in the last last agreement.
- Liability - in case of claim - ceiling change for liability to be limited to eNitiatives professional liab insurance coverage or total amount actually paid by Cortica, whichever is higher. OA: Done.
- Milestone 3.5 increased to $1,500 (from $1,250) OA: It was supposed to be $1,500 as it is with all of our existing clients (which is 50% of MS 3.0). Nevertheless, as a gesture of good will we will keep it at $1,250.
- CIP patent should start at 2.0 as noted in your email below (currently stated as starting at 1.0). OA: Done.
- Previous agreement stated that IP Audits would occur no more than once per year at a charge equivalent of MS 1.0 (The IP Audit is not included in the new agreement). OA: Done.
- Price per share is noted as lesser of then known price per share or exercise price given to employees. The attached cap is not mentioned. OA: We cleaned up the language to avoid confusion. The 0.5% cap can be added, however, as we discussed it at the time also with your lawyers, this cap is just to stop going over that number and whenever it goes below then we get issued any outstanding stock owed.
- New stipulation has been added regarding exercise of options. (shall remain exercisable regardless of term in case of closing, merger, sale of all assets, closing of IPO...). This stipulation was not in prior agreement. OR: It is to remain exercisable until such events occur – what is avoided here is the case of expiration as a result of contract termination.
-
- Confidentiality agreement has been added. Looks ok - (5 year term).

Thx

Tel Aviv, December 31, 2015

Cortica Ltd.
Mr. Igal Raichelgauz – CEO

Re: Letter of Engagement

Dear Igal,

We are glad that Cortica Ltd. (hereinafter the "Signee") has decided to engage with eNitiatives IP Ltd. (hereinafter the "Firm") and would like to set forth the basic terms of our engagement as described in this letter of engagement (hereinafter the "LOE") that includes attachments thereto.

Scope of Engagement

The firm shall provide the Signee with Intellectual Property (IP) related services as well as other matters as shall be explicitly requested by you from time to time, including the transfer of cases previously handled by Heskia Hacmun Law Firm. Information regarding our IP Catalyst Services is as provided in Attachment I, which is an integral part of the LOE.

Fees, Expenses and Payment Terms

The price of our IP Catalyst services shall be on a milestone basis as set forth in Attachment I, including a flat rate for expenses. For any other services that shall be explicitly requested by Signee from us, we will apply our hourly rates (US$ 450 for executives, US$250 for associates and US$ 90 for trainees). ~~requested by Signee and for which there is no specific agreed upon service fee, we shall charge Signee based on the actual time spent on handling the matter in accordance with our hourly rates.~~Expenses related to the other services that are in excess of $500 will be brought to your prior approval.

VAT at the prevailing rate shall be added to all forms of payments unless the Firm's auditors advise otherwise.

Payments shall be made within 30 days (preferably by way of wire transfer or other electronic means) following the issuance of our Firm's electronic invoice. Upon receipt of payment, the Firm will issue and mail to the Signee a corresponding original tax invoice/receipt.

Confidentiality

Consistent with their commitment to confidentiality, the parties agree that the Confidential Disclosure Agreement ("**CDA**") of Attachment II, is effective as of the date of this LOE, and is an integral part of this LOE. For the purpose of providing the services herein disclosure of Confidential Information, covered by the CDA, to Firm's legal counsels, patent attorneys and/or patent agents shall not be considered a disclosure to a third party and is specifically permitted. The CDA shall include and be binding upon all the Firm's employees.

Termination of Engagement

Signee may terminate the LOE at any time without providing any cause. Upon receipt of a written termination notice the Firm shall cease any activities in Signee's matters and, if required, act as shall be required by Signee in order to transfer the representation to another firm as shall be designated by Signee. Signee will be invoiced for any remaining outstanding debt, including acceleration as may be applicable, related to this LOE and such shall be paid by Signee according to the payment terms.

Jurisdiction & Liability

The sole and exclusive jurisdiction concerning any claims against the Firm and/or any of its individuals shall be with the authorized courts of Tel-Aviv, Israel. Any claim concerning the Firm's professional liability shall be limited to the extent of the Firm's professional liability insurance coverage or the total amount actually paid by Signee to the Firm, whichever is higher.

If the above is acceptable, please sign below and return to us.

Very truly yours,

Or Agassi, Adv.
eNitiatives IP Ltd.

I have read the above and agree to it:

_____ _____

Signee: _____ Date

ID: _____

Attachment I

The IP Catalyst Services (IPCS)

The IPCS is a service that provides front-end interface between the inventors and the back-end service of formal patent applications and shall include the following activities and milestones:

- Review of the current and proposed intellectual property and proposal for a protection strategy using the patent pending IP Scan and IP Audit processes and reports
- Interview of inventors for the purpose of understanding the inventions and establishing a plan for patent applications
- Prepare the invention disclosure documentation for the relevant patent application proceeding
- Management of foreign patent attorneys to commence the preparation of the patent applications and proceedings in various jurisdictions
- Respond to office actions received from the Israel patent office and assist in response in other jurisdictions
- Handle the client's administrative work associated with the patent applications

For the avoidance of doubt, it is agreed that all inventions and/or improvements to patents made by the firm solely in conjunction with the subject matter of Signee's inventions, and solely within the scope of firm's work with Signee, shall become Signee's property and all rights thereto shall be promptly assigned to Signee, and the firm shall not be entitled to additional compensation, other than the compensation contemplated herein.

The IPCS are paid for on a milestone basis as follows:

MS 1.0 – Submission of drafts to foreign patent attorney/agent or filing a provisional patent application – US$ 2,500;
MS 1.5 – restart of a provisional application for preparation for filing – US$ 1,250;
MS 2.0 – filing of a non-provisional patent application in a first jurisdiction – US$ 2,500; MS 2.5 – filing on the non-provisional patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250;
MS 3.0 – allowance of a patent application in a first jurisdiction – US$ 3,000;
MS 3.5 – allowance of a patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250.

- IP Audit – no more than once per year a charge equivalent to a MS 1.0 charge.
- A Divisional patent begins with a MS 2.0 charge;
- A Continuation patent begins with a MS 1.5 charge;
- A continuation-in-part (CIP) patent begins with a MS 1.0 charge.
- Continuation and/or CIP filed subsequently to a continuation and/or CIP begins with MS 2.0

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Special Condition. Where as the IPCS further requires consulting and resorting to industry and business specific knowledge which aims to increase the business value of the inventions, you agree that eNitiatives Business Consulting (herein after "EBC") will provide such services and will be entitled to compensation in the form of stock and/or options to purchase shares of Common Stock of Signee, on a per milestone basis, in an amount equal to the cash value of each

such milestone divided by the then known price per share, with an exercise price that is the lesser of the known price per share and the option price given to employees of signee, and fully vested (the "Equity"). Such Equity shall be granted no more than twice per calendar year and at any investment round. Such Equity shall remain exercisable, regardless of any termination, until the first to occur of: the closing of a merger of the Signee in or with another entity, the sale of all or substantially all of the shares or assets of the Signee, and the closing of an initial public offering of the Signee's securities.

Terms of Termination. Notwithstanding termination of this Agreement for any reason, Equity and/or payments for all milestones as detailed above shall still be granted and/or paid if (a) disclosure of the patent by Signee and/or a Signee's employee to the firm was made prior to the date of termination, and (b) the firm materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination.

Upon a merger or acquisition of all, or substantially all, of Signee assets (an "**M&A**"), all pending milestones as detailed above shall be deemed completed and therefore options and/or payments will be due immediately upon closing of the M&A, unless the merging or acquiring entity provides written notice that this Agreement will continue in full force and effect and no termination of this Agreement shall occur for a period of at least six (6) months after the closing of the M&A.

Expenses. Expenses for the IPCS (e.g., local travel, search, telephone, fax, parking, etc.) shall be charged at an agreed upon flat rate of US$ 150 per milestone.

Attachment II

CONFIDENTIAL DISCLOSURE AGREEMENT (CDA)

In order to protect certain confidential information, the parties of this LOE agree that:

1. Either Party may be a disclosing Party or a receiving Party.
2. Confidential Information (CI): means all written information presented by a disclosing Party related to the business of the disclosing Party and business opportunities under consideration by the disclosing Party, including, without limitation, business plans, business models, pricing and cost data, market research, customer and supplier information, information concerning employees and independent contractors, proprietary software and methods, and information concerning proprietary inventions and technologies during the Disclosure Period. The CI generally pertains to inventions of the Signee which it may wish to protect by submission of patent applications and confidential business information of the Signee.
3. The use of the CI is for the purpose of the IP Catalyst services provided by the Firm. Signee fully understands that the Firm may retain a variety of employees, including but not limited to attorneys, patent agents and/or attorneys, as well as any other personnel, technical or otherwise deemed necessary to perform its IP Catalyst services, at its sole discretion.
4. Confidentiality Period: Five (5) years from disclosure date.
5. Disclosure Period: For as long as the LOE is in full force and effect.
6. Standard of Care: Recipient shall protect the disclosed CI by using the same degree of care, but no less than a reasonable degree of care, to prevent unauthorized use, dissemination, or publication of the CI as Recipient uses to protect its own CI of a like nature. CI will be provided to persons only on a need to know basis in connection with the use defined in this CDA. The Firm may disclose such CI to a third party patent attorney and/or patent agent appointed by Signee and/or by the Firm.
7. Marking: Recipient's obligations shall only extend to CI that is described in Paragraph 2, and that (a) comprises specific materials individually listed in paragraph 2; or (b) is marked as confidential at the time of disclosure; or (c) is unmarked (e.g., orally disclosed) but treated as confidential at the time of disclosure, and is designated as confidential in a written memorandum sent to Recipient's primary representative within thirty days of disclosure, summarizing the CI sufficiently for identification.
8. Exclusions: This Agreement imposes no obligation upon Recipient with respect to information that (a) was in Recipient's possession before receipt from Discloser; (b) is or becomes a matter of public knowledge through no fault of Recipient; (c) is rightfully received by Recipient from a third party without a duty of confidentiality; (d) is disclosed by Discloser to a third party without a duty of confidentiality on the third party; (e) was independently developed by Recipient; (f) is disclosed under operation of law; or (g) is disclosed by warrant. Each Discloser warrants that it has the right to make the disclosures to Recipient.
9. Rights: Neither party acquires any intellectual property rights under this CDA except the limited rights necessary to carry out the purposes set forth in paragraph 3. This CDA shall not restrict reassignment of Recipient's employees. Written data delivered by Discloser to Recipient shall remain the property of Discloser, and at the end of the Confidentiality Period, shall be returned to the Discloser upon written request, or destroyed at the Discloser's option.
10. This CDA does not create any agency or partnership relationship.
11. All additions or modifications to this CDA must be made in writing and must be signed by both parties.
12. This CDA is made under, and shall be constructed according to, the laws of Israel.

נספח 12

התכתובות מיום 5.4.2016.

Annex 12

The correspondence dated April 5, 2016.

From: Asher Avital
To: Leron Kishoni
Subject: Re: Cortica Patent costs for 2015
Date: Tuesday, April 5, 2016 3:52:35 PM

Please add our redlines and send him

Asher Avital
CFO
Mobile: +972-50-6975097
Tel Aviv, Israel

On 5 2016 באפר׳, at 14:45, Leron Kishoni <leron.kishoni@cortica.com> wrote:

> Asher - the cap was added but the price of $65 was not.
>
> On Tue, Apr 5, 2016 at 2:35 PM, <or@enitiatives.biz> wrote:
>
> > Hi Asher,
> >
> > Attached with the exact wording as before.
> >
> > Best regards,
> >
> > Or
> >
> > ---
> >
> > **From:** Asher Avital [mailto:asher.avital@cortica.com]
> > **Sent:** Tuesday, April 5, 2016 1:10 PM
> > **To:** or@enitiatives.biz
> > **Cc:** Leron Kishoni
> > **Subject:** RE: Cortica Patent costs for 2015
> >
> > Or,
> >
> > Please add the section for the cap. And make sure the wording remain as was before.

Asher Avital

CFO

Cortica

+972-506-975097

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Monday, April 04, 2016 3:24 PM
To: asher.avital@cortica.com
Subject: FW: Cortica Patent costs for 2015
Importance: High

Hi Asher,

We have not yet received the executed agreement. Can you please take care of this?

Thanks,

Or

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Monday, March 21, 2016 2:37 PM
To: asher.avital@cortica.com
Subject: FW: Cortica Patent costs for 2015

Hi Asher,

Can we please close this matter?

Thanks,

Or

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Monday, March 14, 2016 5:54 PM
To: asher.avital@cortica.com
Subject: FW: Cortica Patent costs for 2015

Hi Asher,

Just a quick follow up.

Thanks,

Or

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Thursday, March 10, 2016 2:59 PM
To: asher.avital@cortica.com
Subject: FW: Cortica Patent costs for 2015

Hi Asher,

Please see below and in the attached. I am meeting Igal and Karina at your offices today at 5pm and it would be great if we can execute then.

Thanks,

Or

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Wednesday, March 9, 2016 4:50 PM
To: or@enitiatives.biz
Subject: FW: FW: Cortica Patent costs for 2015

Or,

Please make sure that all agreements are reflected in the new one. Below are what we have found so far…

The attached cap was not included in the new agreement. OA: The overall cap of 0.5% is and remains agreed upon. The US$65 is not relevant any more as since that time there were rounds of investment in Cortica and the actual price at those rounds should be used.

Also, the email from February 2015 only stated that all CIP (continuation-in-part) patents would start at milestone 2.0, but did not change any other expenses of the agreement.

(In the past year, I did confirm that all patents were charged at 2.0, except for COR-120 which was charged at milestone 1.0.) OR: Made the requested changes. We agreed to that every continuation and/or CIP subsequent to a continuation and/or CIP shall start at MS 2.0.

The following are key differences in the new agreement:

- Hourly rates not included. OA: Added.
- Stipulation that expenses over $500 will be approved is not noted. OA: Added.
- In case of agreement term, outstanding debt payment may be accelerated. (was not included in last agreement) OA: It was included in the last last agreement.
- Liability - in case of claim - ceiling change for liability to be limited to eNitiatives professional liab insurance coverage or total amount actually paid by Cortica, whichever is higher. OA: Done.
- Milestone 3.5 increased to $1,500 (from $1,250) OA: It was supposed to be $1,500 as it is with all of our existing clients (which is 50% of MS 3.0). Nevertheless, as a gesture of good will we will keep it at $1,250.
- CIP patent should start at 2.0 as noted in your email below (currently

stated as starting at 1.0). OA: Done.
- Previous agreement stated that IP Audits would occur no more than once per year at a charge equivalent of MS 1.0 (The IP Audit is not included in the new agreement). OA: Done.

- Price per share is noted as lesser of then known price per share or exercise price given to employees. The attached cap is not mentioned. OA: We cleaned up the language to avoid confusion. The 0.5% cap can be added, however, as we discussed it at the time also with your lawyers, this cap is just to stop going over that number and whenever it goes below then we get issued any outstanding stock owed.

- New stipulation has been added regarding exercise of options. (shall remain exercisable regardless of term in case of closing, merger, sale of all assets, closing of IPO...). This stipulation was not in prior agreement. OR: It is to remain exercisable until such events occur – what is avoided here is the case of expiration as a result of contract termination.

-
- Confidentiality agreement has been added. Looks ok - (5 year term).

Thx

On Mon, Mar 7, 2016 at 4:47 PM, Asher Avital <asher.avital@cortica.com> wrote:

Asher Avital

CFO

Cortica

+972-506-975097

נספח 13

תכתובות בין הגב' קישוני לבין עו"ד אגסי כולל הסכם 2016 חתום בשמו של מר אביטל.

Annex 13

Correspondence between Ms. Kishoni and Adv. Agassi, including the 2016 Agreement signed in the name of Mr. Avital.

From: Leron Kishoni
To: or@enitiatives.biz
Cc: Asher Avital
Subject: Re: Cortica Patent costs for 2015
Date: Wednesday, April 6, 2016 7:39:29 PM
Attachments: eNitiatives-Cortica_Agreement_Apr 2016_Signed.pdf

---

Hi Or,

See attached signed by Asher.

Thanks,
Leron

On Wed, Apr 6, 2016 at 3:21 PM, <or@enitiatives.biz> wrote:

> Hi Leron,
>
> This is OK. Can you please have it signed and send back to us?
>
> Thanks,
>
> Or
>
> **From:** Leron Kishoni [mailto:leron.kishoni@cortica.com]
> **Sent:** Wednesday, April 6, 2016 3:19 PM
> **To:** or@enitiatives.biz
> **Cc:** Asher Avital
> **Subject:** Re: Cortica Patent costs for 2015
>
> Hi Or,
>
> The wording in V02 was still slightly different than the earlier contract. I have modified this section to match.
>
> See attached.
>
> Thanks,

Leron

On Tue, Apr 5, 2016 at 2:35 PM, <or@enitiatives.biz> wrote:

Hi Asher,

Attached with the exact wording as before.

Best regards,

Or

From: Asher Avital [mailto:asher.avital@cortica.com]
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To: or@enitiatives.biz
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Please add the section for the cap. And make sure the wording remain as was before.

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Subject: FW: Cortica Patent costs for 2015

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To: or@enitiatives.biz
Subject: FW: FW: Cortica Patent costs for 2015

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-
- Confidentiality agreement has been added. Looks ok - (5 year term).

eNitiatives
Where IP matters™

Tel Aviv, December 31, 2015

Cortica Ltd.
Mr. Igal Raichelgauz – CEO

Re: Letter of Engagement

Dear Igal,

We are glad that Cortica Ltd. (hereinafter the "Signee") has decided to engage with eNitiatives IP Ltd. (hereinafter the "Firm") and would like to set forth the basic terms of our engagement as described in this letter of engagement (hereinafter the "LOE") that includes attachments thereto.

Scope of Engagement

The firm shall provide the Signee with Intellectual Property (IP) related services as well as other matters as shall be explicitly requested by you from time to time, including the transfer of cases previously handled by Meskia Hacmun Law Firm. Information regarding our IP Catalyst Services is as provided in Attachment I, which is an integral part of the LOE.

Fees, Expenses and Payment Terms

The price of our IP Catalyst services shall be on a milestone basis as set forth in Attachment I, including a flat rate for expenses. For any other services that shall be explicitly requested by Signee from us, we will apply our hourly rates (US$ 450 for executives, US$250 for associates and US$ 90 for trainees). Expenses related to the other services that are in excess of $500 will be brought to your prior approval.

VAT at the prevailing rate shall be added to all forms of payments unless the Firm's auditors advise otherwise.

Payments shall be made within 30 days (preferably by way of wire transfer or other electronic means) following the issuance of our Firm's electronic invoice. Upon receipt of payment, the Firm will issue and mail to the Signee a corresponding original tax invoice/receipt.

Confidentiality

Consistent with their commitment to confidentiality, the parties agree that the Confidential Disclosure Agreement ("**CDA**") of Attachment II, is effective as of the date of this LOE, and is an integral part of this LOE. For the purpose of providing the services herein disclosure of Confidential Information, covered by the CDA, to Firm's legal counsels, patent attorneys and/or patent agents shall not be considered a disclosure to a third party and is specifically permitted. The CDA shall include and be binding upon all the Firm's employees.

Termination of Engagement

WeWork, Sarona Cetner, 3 Aluf Kalman Magen Street, 6107075 Tel Aviv-Yafo, Israel
17 Moshe Shapira Street, 4224017 Netanya, Israel
Fax: +972-9-816-4307 Phone: +972-9-861-4507

Signee may terminate the LOE at any time without providing any cause. Upon receipt of a written termination notice the Firm shall cease any activities in Signee's matters and, if required, act as shall be required by Signee in order to transfer the representation to another firm as shall be designated by Signee. Signee will be invoiced for any remaining outstanding debt, including acceleration as may be applicable, related to this LOE and such shall be paid by Signee according to the payment terms.

Jurisdiction & Liability

The sole and exclusive jurisdiction concerning any claims against the Firm and/or any of its individuals shall be with the authorized courts of Tel-Aviv, Israel. Any claim concerning the Firm's professional liability shall be limited to the extent of the Firm's professional liability insurance coverage or the total amount actually paid by Signee to the Firm, whichever is higher.

If the above is acceptable, please sign below and return to us.

Very truly yours,

Or Agassi, Adv.
eNitiatives IP Ltd.

I have read the above and agree to it:

April 6, 2016

Signee: Asher Avital, CFO

Date

ID: Cortica ID: 513975250

Attachment I

The IP Catalyst Services (IPCS)

The IPCS is a service that provides front-end interface between the inventors and the back-end service of formal patent applications and shall include the following activities and milestones:

- Review of the current and proposed intellectual property and proposal for a protection strategy using the patent pending IP Scan and IP Audit processes and reports
- Interview of inventors for the purpose of understanding the inventions and establishing a plan for patent applications
- Prepare the invention disclosure documentation for the relevant patent application proceeding
- Management of foreign patent attorneys to commence the preparation of the patent applications and proceedings in various jurisdictions
- Respond to office actions received from the Israel patent office and assist in response in other jurisdictions
- Handle the client's administrative work associated with the patent applications

For the avoidance of doubt, it is agreed that all inventions and/or improvements to patents made by the firm solely in conjunction with the subject matter of Signee's inventions, and solely within the scope of firm's work with Signee, shall become Signee's property and all rights thereto shall be promptly assigned to Signee, and the firm shall not be entitled to additional compensation, other than the compensation contemplated herein.

The IPCS are paid for on a milestone basis as follows:

MS 1.0 – Submission of drafts to foreign patent attorney/agent or filing a provisional patent application – US$ 2,500;
MS 1.5 – restart of a provisional application for preparation for filing – US$ 1,250;
MS 2.0 – filing of a non-provisional patent application in a first jurisdiction – US$ 2,500; MS 2.5 – filing on the non-provisional patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250;
MS 3.0 – allowance of a patent application in a first jurisdiction – US$ 3,000;
MS 3.5 – allowance of a patent application in a subsequent jurisdiction on a per jurisdiction basis – US$ 1,250.

- IP Audit – no more than once per year a charge equivalent to a MS 1.0 charge.
- A Divisional patent begins with a MS 2.0 charge;
- A Continuation patent begins with a MS 1.5 charge;
- A continuation-in-part (CIP) patent begins with a MS 1.0 charge.
- Continuation and/or CIP filed subsequently to a continuation and/or CIP begins with MS 2.0.

Special Condition. Where as the IPCS further requires consulting and resorting to industry and business specific knowledge which aims to increase the business value of the inventions, you agree that eNitiatives Business Consulting (herein after "EBC") will provide such services and will be entitled to compensation in the form of stock and/or options to purchase shares of Common Stock of Signee, on a per milestone basis, in an amount equal to the cash value of each

such milestone divided by the then known price per share, with an exercise price that is the lesser of the known price per share and the option price given to employees of signee, and fully vested (the "Equity"). Such Equity shall be granted no more than twice per calendar year and at any investment round. Such Equity shall remain exercisable, regardless of any termination, until the first to occur of: the closing of a merger of the Signee in or with another entity, the sale of all or substantially all of the shares or assets of the Signee, and the closing of an initial public offering of the Signee's securities. An overall cap of 0.5% of the outstanding shares of the Signee shall be set for the holding of the Firm in the Signee. Furthermore, the "then known price per share" shall be fixed at US$ 65 per share for any shares not issued to the Firm to date, and be in effect until such time that the "known price per share" is determined at a new round of investment into the Signee.

Terms of Termination. Notwithstanding termination of this Agreement for any reason, Equity and/or payments for all milestones as detailed above shall still be granted and/or paid if (a) disclosure of the patent by Signee and/or a Signee's employee to the firm was made prior to the date of termination, and (b) the firm materially contributed to the preparation of the patent application prior to termination, and (c) filing of the respective patent application occurred within six (6) months of such termination.

Upon a merger or acquisition of all, or substantially all, of Signee assets (an "**M&A**"), all pending milestones as detailed above shall be deemed completed and therefore options and/or payments will be due immediately upon closing of the M&A, unless the merging or acquiring entity provides written notice that this Agreement will continue in full force and effect and no termination of this Agreement shall occur for a period of at least six (6) months after the closing of the M&A.

Expenses. Expenses for the IPCS (e.g., local travel, search, telephone, fax, parking, etc.) shall be charged at an agreed upon flat rate of US$ 150 per milestone.

Attachment II

CONFIDENTIAL DISCLOSURE AGREEMENT (CDA)

In order to protect certain confidential information, the parties of this LOE agree that:

1. Either Party may be a disclosing Party or a receiving Party.
2. Confidential Information (CI): means all written information presented by a disclosing Party related to the business of the disclosing Party and business opportunities under consideration by the disclosing Party, including, without limitation, business plans, business models, pricing and cost data, market research, customer and supplier information, information concerning employees and independent contractors, proprietary software and methods, and information concerning proprietary inventions and technologies during the Disclosure Period. The CI generally pertains to inventions of the Signee which it may wish to protect by submission of patent applications and confidential business information of the Signee.
3. The use of the CI is for the purpose of the IP Catalyst services provided by the Firm. Signee fully understands that the Firm may retain a variety of employees, including but not limited to attorneys, patent agents and/or attorneys, as well as any other personnel, technical or otherwise deemed necessary to perform its IP Catalyst services, at its sole discretion.
4. Confidentiality Period: Five (5) years from disclosure date.
5. Disclosure Period: For as long as the LOE is in full force and effect.
6. Standard of Care: Recipient shall protect the disclosed CI by using the same degree of care, but no less than a reasonable degree of care, to prevent unauthorized use, dissemination, or publication of the CI as Recipient uses to protect its own CI of a like nature. CI will be provided to persons only on a need to know basis in connection with the use defined in this CDA. The Firm may disclose such CI to a third party patent attorney and/or patent agent appointed by Signee and/or by the Firm.
7. Marking: Recipient's obligations shall only extend to CI that is described in Paragraph 2, and that (a) comprises specific materials individually listed in paragraph 2; or (b) is marked as confidential at the time of disclosure; or (c) is unmarked (e.g., orally disclosed) but treated as confidential at the time of disclosure, and is designated as confidential in a written memorandum sent to Recipient's primary representative within thirty days of disclosure, summarizing the CI sufficiently for identification.
8. Exclusions: This Agreement imposes no obligation upon Recipient with respect to information that (a) was in Recipient's possession before receipt from Discloser; (b) is or becomes a matter of public knowledge through no fault of Recipient; (c) is rightfully received by Recipient from a third party without a duty of confidentiality; (d) is disclosed by Discloser to a third party without a duty of confidentiality on the third party; (e) was independently developed by Recipient; (f) is disclosed under operation of law; or (g) is disclosed by warrant. Each Discloser warrants that it has the right to make the disclosures to Recipient.
9. Rights: Neither party acquires any intellectual property rights under this CDA except the limited rights necessary to carry out the purposes set forth in paragraph 3. This CDA shall not restrict reassignment of Recipient's employees. Written data delivered by Discloser to Recipient shall remain the property of Discloser, and at the end of the Confidentiality Period, shall be returned to the Discloser upon written request, or destroyed at the Discloser's option.
10. This CDA does not create any agency or partnership relationship.
11. All additions or modifications to this CDA must be made in writing and must be signed by both parties.
12. This CDA is made under, and shall be constructed according to, the laws of Israel.

נספח 14

תכנית האופציות של קורטיקה.

Annex 14

Cortica's option plan.

CORTICA LTD.

AMENDED AND RESTATED 2007 SHARE OPTION PLAN

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CORTICA LTD.

AMENDED AND RESTATED 2007 SHARE OPTION PLAN

This plan, as amended from time to time, shall be known as the Cortica 2007 Share Option Plan (the "**Plan**").

1. Purpose

The Plan is intended to increase shareholder value and to advance the interests of the Company by furnishing economic incentives designed to provide an incentive to attract, motivate, and retain, in the employ of the Company, persons of training, experience, and ability, to attract employees, directors, office holders, consultants, service providers and any other entity which the Board shall decide their services are considered valuable to the Company, to encourage the sense of proprietorship of such persons, and to stimulate the active interest of such persons in the development and financial success of the Company by providing them with opportunities to purchase shares in the Company, pursuant to the Plan.

2. Definitions

For purposes of interpreting the Plan and related documents (including the Option Agreement and its appendices), the following definitions shall apply:

(a) "**Affiliate**" - means corporate entities who are related to the Company by way of common ownership or control, as such term is defined in section 32(9) of the Ordinance, either directly or indirectly, either partially or entirely, including but not limited to any "employing company" and "employer" as defined in Section 102(a) of the Ordinance.

(b) "**Applicable Laws**" - means the legal requirements applicable to the administration of option plans including, including under applicable U.S. state corporate laws, U.S. federal and applicable state securities laws, the Code, other applicable U.S. federal and state laws, any Stock Exchange rules or regulations and the applicable laws, rules and regulations of any country or jurisdiction where Options are granted under the Plan, as such laws, rules, regulations and requirements shall be in place from time to time, including without limitation the requirements relating to the administration of employee stock share option plans under the law of the State of Israel and any stock exchange or quotation system on which the shares shall be listed or quoted.

(c) "**Approved 102 Option**" - means an Option issued pursuant to Section 102(b) of the Tax Ordinance and held in trust by the Trustee for the benefit of the Optionee.

(d) "**Board**" - means the Board of Directors of the Company.

(e) "**Cause**"- means, (i) conviction of any felony involving moral turpitude or affecting the Company; (ii) any failure (as a result of gross negligence or willful misconduct) to carry out, as an employee of the Company or its Subsidiaries, a reasonable directive of the chief executive officer of the Company, as applicable, the Board or the Optionee's direct supervisor, which involves the business of the Company or its Subsidiaries and which was capable of being lawfully performed by Optionee; (iii) embezzlement or theft of funds of the Company or its Subsidiaries; (iv) any breach of the Optionee's fiduciary duties or duties of care towards the Company or of its Subsidiaries; including, without limitation, self-dealing, prohibited disclosure of confidential information of, or relating to, the Company or its Subsidiaries, or engagement in any business competitive to the business of the Company; (v) any conduct (other than conduct in good faith) reasonably determined by the Board to be materially detrimental to the Company; (vi) Circumstances justifying the revocation and/or reduction of a Optionee's entitlement to severance pay pursuant to Sections 16 or 17 of the Severance Pay Law, 1963, and (vii) any other event defined as "Cause" under the Optionees' employment or engagement agreement with the Company.

(f) "**Chairman**" - means the chairman of the Board.

(g) "**Code**" - shall mean the United States Internal Revenue Code of 1986, as amended, and any successor legislation thereto.

(h) "**Company**" - shall mean Cortica Ltd. P.C. 51-397525-0, an Israeli corporation, and any successor thereto.

(i) "**Controlling Shareholder**" - shall have the meaning ascribed to it in Section 32(9) of the Tax Ordinance.

(j) "**Date of Grant**"- shall have the meaning set forth in section 20 below.

(k) "**Director**" - means a member of the Board.

(l) "**Disability**" - means an Optionee's inability to perform his or her duties with the Company, for a consecutive period of at least 120 days or for an aggregate period of 180 days in any 360 days, by reason of any medically determinable physical or mental impairment, as determined by a physician selected by the Optionee and acceptable to the Company.

(m) "**Effective Date**" - shall mean the date on which the Plan is approved by the Board.

(n) "**Employee**" – shall mean a person who is employed by the Company or an Affiliate, including an individual who is serving as a director or an office holder, but excluding a Controlling Shareholder.

(o) "**Employment**" - shall mean, for purposes of section 10, continuous and regular salaried employment with the Company, which shall include (unless the Board shall otherwise determine) any period of vacation, any approved leave of absence or any salary continuation or severance pay period.

(p) "**Exercise Price**" – shall mean the consideration required to be paid by an Optionee in order to exercise one Option.

(q) "**Expiration Date**" – Shall mean the date that the options can no longer be exercisable as set forth in Section 6.

(r) "**Fair Market Value**" – means, as of any date, the value of a Share determined as follows:

(i) If the Shares are listed on any established stock exchange or a national market system, their Fair Market Value shall be the closing sales price for such Shares (or the closing bid, if no sales were reported) as quoted on such exchange or system for the last market trading day prior to the time of determination;

(ii) If the ordinary shares are regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value shall be the mean between the high bid and low asked prices for the ordinary shares on the last market trading day prior to the day of determination;

(iii) In the absence of an established market for the Shares, the Fair Market Value thereof shall be determined in good faith by the Board;

(iv) For Options that are Incentive Options, in the absence of either (i) or (ii) above, the value that is determined in good faith by the Board as of the day of determination to be the Fair Market Value; provided that the Board shall make such determination in accordance with Code Section 422(c)(1) and all applicable US Tax Regulations and other applicable guidance promulgated pursuant thereto; or

(v) For Options that are not Incentive Options but are granted to US Optionees, in the absence of either (i) or (ii) above, the value that is determined by the Board as of the day of determination to be the Fair Market Value pursuant to applicable US Tax Regulations and other applicable guidance promulgated pursuant to Code Section 409A.

For the avoidance of doubt, the above definition of Fair Market Value shall not apply for the purpose of determining the tax liability pursuant to Section 102(b)(3) of the Ordinance.

(s) "**Incentive Option**" - Any Option that is granted pursuant to Code Section 422 and that meets all of the following requirements:

(i) such Option is granted to an Employee of the Company or of any Parent or Subsidiary of the Company (as such terms are defined in Code Section 424 and below in this definition);

(ii) such Option is granted within 10 years from the earlier of (A) the date that this Plan was adopted by the Board or (B) the date that this Plan was or is approved by the shareholders of the Company; provided that this Plan shall have been approved by the shareholders of the Company within 12 months before or after the date that the Plan was adopted by the Board;

(iii) the Option Agreement for such Option provides that the Option is not exercisable after the expiration of 10 years from the date on which such Option is granted;

(iv) the Exercise Price for such Option is not less than the Fair Market Value per Share of the Company's Ordinary Shares, using the date of grant of such Option as the day of determination of the Fair Market Value;

(v) the Option Agreement for such Option provides that the Option is not transferable by the Employee otherwise than by will or the laws of descent and distribution, and is exercisable, during the Employee's lifetime, only by the Employee;

(vi) either (A) the Employee, at the time that such Option is granted, does not own stock possessing more than 10% of the total combined voting power of all classes of shares of the Company or of any Parent or Subsidiary of the Company (as such terms are defined in Code Section 424 and below in this definition) or (B) both of the following conditions are met: (I) the exercise period under clause (iii) above is limited to 5 years for the Option and (II) the Exercise Price for the Option is at least 110% of the Fair Market Value on the day of determination under clause (iv) above;

(vii) neither the Board in granting such Option nor the relevant Option Agreement state that the Option is to be treated as other than an Incentive Option; and

(viii) any rights to pay the Exercise Price for such Option other than in cash (such as, any type of cashless exercise using Shares of the Company) are stated in the Option Agreement for the Option at the time that the Option is granted, and are not added later by way of any amendment to, modification of or substitution for such Award Agreement.

Notwithstanding the foregoing:

(i) with respect to any such Incentive Option, only the portions of the Option that are represented by the first $100,000 in the Exercise Price of the Option (together with all other Incentive Options held by the Optionee) that becomes exercisable by the Employee for the first time during any calendar year will be treated as an Incentive Option;

(ii)(A) if any portion of such Incentive Option is exercised more than three months after the Termination of the Employee for any reason other than his or her death or disability (within the meaning of Code Section 22(e)(3)), such portion will not be treated as an Incentive Option and (B) if any portion of such Incentive Option is exercised more than one year after the Termination of the Employee on account of his or her disability (as defined above), such portion will not be treated as an Incentive Option; and

(iii) if such Incentive Option is modified, extended or renewed (within the meaning of Code Section 424(h)), such Option will thereupon cease to be treated as an Incentive Option.

For purposes of the foregoing:

(i) the term Parent of the Company shall have the meaning provided in Code Section 424(e). Code Section 424(e) defines such term as including any corporation that owns, directly or indirectly, shares possessing 50% or more of the total combined voting power of all classes of shares of the Company; and

(ii) the term Subsidiary of the Company shall have the meaning provided in Code Section 424(f). Code Section 424(f) defines such term as including any corporation in which the Company owns, directly or indirectly, shares possessing 50% or more of the total combined voting power of all classes of shares of such subsidiary corporation.

(t) "**IPO**" - means the Initial Public Offering of the Company's shares pursuant to a registration statement filed with and declared effective under the Israeli Securities Law, 1968, under the U.S. Securities Act of 1933, as amended, or under any similar law of any other jurisdiction.

(u) "**Option**" - shall mean the right to purchase the number of Shares specified by the Board, at a price and for the term fixed by the Board in accordance with the Plan and subject to any other limitations and restrictions as this Plan and the Board shall impose.

(v) "**Option Agreement**" - means a written agreement between the Company and an Optionee evidencing the terms and conditions of an individual Option issuance. The Option Agreement shall state, inter alia, the number of Shares covered thereby, the dates when it may be exercised (subject to section 8), the Exercise Price per Share subject to the Option and such other terms as the Board in its discretion may prescribe. The Option Agreement is subject to the terms and conditions of the Plan, unless otherwise specifically provided in such Option Agreement (provided that any deviation from the terms of this Plan shall be, in case of 102 Options, in accordance with Section 102 of the Tax Ordinance).

(w) "**Optionee**" - means any person who receives or holds an Option under the Plan.

(x) "**Share**" - shall mean the ordinary shares, par value NIS 0.0001 per share, of the Company, as may be adjusted pursuant to section 11 of the Plan.

(y) "**Successor Company**" - means any entity into and with which the Company is merged pursuant to a Transaction in which the Company is not the surviving entity.

(z) "**Spin-Off Transaction**" - means any transaction in which assets of the Company are transferred or sold to a company or corporate entity in which the shareholders of the Company hold equal stakes, pro-rata to their ownership of the Company [hence – transfer of assets to a sister company of the Company].

(aa) "**Stock exchange**" - means any stock exchange, on which ordinary shares of the Company are listed, or such other market or a national market system, on which the Company's ordinary shares' prices are regularly quoted.

(bb) "**Structural Change**" - means any re-domestication of the Company, share flip, creation of a holding company for the Company which will hold substantially all of the shares of the Company or any other transaction involving the Company in which the ordinary shares of the Company outstanding immediately prior to such transaction continue to represent, or are converted into or exchanged for shares that represent, immediately following such transaction, at least a majority, by voting power, of the share capital of the surviving, acquiring or resulting corporation and in which there is no material change to the interests held by the shareholders of the Company prior to such transaction and thereafter.

(cc) "**Tax Ordinance**" - means the Israeli Income Tax Ordinance [New Version]-1961 and the regulations, rules, orders or procedures promulgated thereunder as now in effect or as hereafter amended.

(dd) "**Transaction**" - Any deemed liquidation event and/or any other similar or parallel definition as defined in and determined pursuant to the Articles of Association of the Company as

amended from time to time, excluding any Structural Change or Spin-off Transaction, and including, for the avoidance of doubt:

(a) A sale of all or substantially all the assets of the Company and its subsidiaries taken as a whole, or the sale or disposition (whether by merger or otherwise) of one or more subsidiaries of the Company if substantially all of the assets of the Company and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries;
(b) A merger of the Company with or into another entity, including a reverse triangular merger but excluding a merger which falls within the definition of Structural Change; or
(c) A sale of all or substantially all of the ordinary shares of the Company to a third party unrelated to the current shareholders of the Company, whether by a single transaction or a series of related transactions which occur either over a period of 12 months or within the scope of the same acquisition agreement.

(ee) "**Trustee**" - means any person or entity appointed by the Company to serve as a trustee and approved according to applicable law.

(ff) "**Vesting Dates**" - means, with respect to any Option, the date as of which the Optionee shall be entitled to exercise such Option, as set forth in section 8 of the Plan.

(gg) "**Unapproved 102 Option**" - means an Option issued pursuant to Section 102(c) of the Tax Ordinance and not held in trust by a Trustee.

(hh) "**102 Option**" means an Option that the Board intends it to be a "102 Option" which shall only be issued to Employees who are not Controlling Shareholder, and shall be subject to and construed consistently with the requirements of Section 102 of the Tax Ordinance and as described hereunder. The Company shall have no liability to any other party, if an Option (or any part thereof), which is intended to be a 102 Option, is not a 102 Option.

Approved 102 Options may either be classified as Capital Gain Options ("**CGO**") or Ordinary Income Options ("**OIO**").

Approved 102 Options elected and designated by the Company to qualify under the capital gain tax treatment in accordance with the provisions of Section 102(b)(2) of the Tax Ordinance shall be referred to herein as **CGO**.

Approved 102 Options elected and designated by the Company to qualify under the ordinary income tax treatment in accordance with the provisions of Section 102(b)(1) of the Tax Ordinance shall be referred to herein as **OIO**.

The Company's election of the type of Approved 102 Options as CGO or OIO issued to Employees (the "**Election**") shall be appropriately filed with the Israeli Tax Authorities before the Date of Grant of any Approved 102 Option.

(ii) "**3(i) Options**" - means Options that do not contain such terms as will qualify under Section 102 of the Tax Ordinance. Such options are available for issuance to any person which the Board determined to be eligible for such options.

3. Administration of the Plan

(a) The Plan shall be administered by the Board. The Board shall have the authority in its sole discretion, subject to the Applicable Law, to administer the Plan and to exercise all the powers and authorities specifically granted to it under the Plan as necessary and advisable in the administration of the Plan.

(b) The Board shall have the full power and authority to: (i) designate Optionees; (ii) determine, on the Date of Grant, the terms and provisions of the respective Option Agreements (which need not be identical), including, but not limited to, the number of Options to be issued to each Optionee, the number of Shares to be covered by each Option, provisions concerning the time and extent to which the Options may be exercised, and the nature and duration of restrictions as

to the transferability, or restrictions constituting substantial risk of forfeiture upon occurrence of certain events; (iii) if applicable, determine the Fair Market Value of the Shares covered by each Option; (iv) designate the type of Options (subject to any Applicable Laws); and (v) cancel or suspend Options, as necessary.

(c) Subject to the provisions of the Plan, the Applicable Laws and subject to the approval of any relevant authorities, the Board shall have the authority, in its discretion:

(i) to construe and interpret the terms of the Plan and any Option Agreements pursuant to the Plan;

(ii) to designate the service providers to whom Options may from time to time be issued hereunder;

(iii) to determine the number of Shares to be covered by each such Option issued hereunder;

(iv) to prescribe forms of Option Agreement for use under the Plan;

(v) to determine performance conditions for the vesting of Options;

(vi) to determine the terms of any Option and/or Option Agreement issued hereunder;

(vii) to determine the Exercise Price of any Option issued hereunder;

(viii) to authorize conversion or substitution under the Plan of any or all Options or Shares (provided that any conversion or substitution of any Incentive Options pursuant to any Transaction, Spin-off Transaction or Structural Change shall conform to the requirements of Code Section 424(a)) and to cancel or suspend Options, as necessary, provided the interests of the Optionees are not harmed;

(ix) to accelerate or defer (with the consent of the Optionee) the right of a Optionee to exercise in whole or in part, any previously granted Options;

(x) to authorize any person to execute on behalf of the Company any instrument required to effectuate the grant of an Option previously granted by the Board;

(xi) to take all other actions and make all other determinations necessary for the administration of the Plan.

(d) No member of the Board shall be liable for any action taken or determination made in good faith with respect to the Plan or any Option issued hereunder.

(e) Any member of the Board shall be eligible to receive Options under the Plan while serving on the Board.

(f) All decisions, determinations and interpretations of the Board shall be final and binding on all Optionees.

4. Designation of Optionees

(a) Options issued under this Plan shall contain such terms as will qualify the Options as 102 Options, 3(i) Options, Unapproved 102 Options or Incentive Options.

(b) Each Option issued pursuant to the Plan, shall be evidenced by an Option Agreement, in such form as the Board shall from time to time approve. Each Option Agreement shall state, among other matters, the number of Shares to which the Option relates, the type of Option issued thereunder (whether CGO, OIO, Unapproved 102 Option, a 3(i) Option or Incentive Options), the Vesting Dates, the Exercise Price per share, the expiration date and such other terms and conditions as the Board in its discretion may prescribe, provided that they are consistent with this Plan. The Option Agreement shall be delivered to the Optionee and shall incorporate the terms of the Plan by reference and specify the terms and conditions thereof and any rules applicable thereto.

(c) The persons eligible for participation in the Plan as Optionees shall include any Employees and any other person which the Board determines to be eligible for the issuance of options; provided, however, that Options qualified under Section 102 of the Tax Ordinance shall be issued only to Employees of the Company.

(d) Neither this Plan nor any Option Agreement nor any offer of Options to an Optionee shall impose any obligation on the Company or an Affiliate to continue to employ or to engage the services of any Optionee, and nothing in the Plan, in any Option Agreement or in any Option issued pursuant thereto shall give any Optionee any right to continue its employment or service with the Company or an Affiliate or restrict the right of the Company or an Affiliate to terminate such employment or services at any time. Further, the Company or an Affiliate expressly reserves the right at any time to dismiss an Optionee free from any liability, or any claim under the Plan, except as provided herein or in the Option Agreement.

(e) The issuance of an Option to an Optionee hereunder, shall neither entitle such Optionee to participate, nor disqualify him from participating, in any other issuance of Options pursuant to this Plan or any other incentive plan of the Company.

(f) Anything in the Plan to the contrary notwithstanding, all issuances of Options to directors and other office holders of the Company shall be authorized and implemented in accordance with the provisions of Chapter 5 of Section 6 of the Israeli Companies Law – 1999, or any successor act or regulation, as in effect from time to time.

5. Shares subject to the plan

(a) **Maximum Number of Shares** The Company has reserved a total of 213,730 Shares for the purposes of the Plan and for the purposes of any other share option plans which may in the future be adopted by the Company, subject to adjustment as set forth in section 11 below. Any Shares which remain unissued and which are not subject to the outstanding Options at the termination of the Plan shall cease to be reserved for the purpose of the Plan, but until termination of the Plan the Company shall at all times reserve sufficient number of Shares to meet the requirements of the Plan. Should any Option for any reason expire or be canceled prior to its exercise or relinquishment in full, the Shares subject to such Option shall become available for issuance or sale under the Plan or under the Company's other share option plans, provided, however, that Shares that have actually been issued under the Plan shall not be returned to the Plan and shall not become available for future distribution under the Plan.

(b) **Shares Available for Issuance**. Shares may be made available from the authorized but unissued shares of the Company or from Shares held in the Company's treasury and not reserved for some other purpose. In addition, if any Option in respect of Shares is canceled or forfeited for any reason without delivery of Shares, the Shares subject to such Option shall thereafter again be available for award pursuant to the Plan.

6. Term of Option

Without derogating from the rights and powers of the Board, if not previously exercised, each Option shall expire upon the tenth (10^{th}) anniversary of the Date of Grant thereof or, upon the earlier termination of the Optionee's Employment (or, if applicable, on the day following the last day on which such Option is exercisable under section 10 below) or in accordance with section 11 below with a Transaction or Liquidation, provided that the Board may establish a shorter term for an Option at the time of the issuance of such Option.

7. Option Exercise Price and Consideration

(a) The Exercise Price of each Share subject to an Option shall be determined, on the Date of Grant, by the Board in its sole and absolute discretion in accordance with any Applicable Laws.

(b) Notwithstanding the foregoing, each Incentive Option shall have its Exercise Price set at or above the Fair Market Value per Share purchasable under such Option (determined as of the Grant Date of such Option) and shall otherwise be subject to the terms and conditions required in the definition of an Incentive Option and required pursuant to Code Section 422 and the applicable US Tax Regulations thereunder.

(c) Notwithstanding the foregoing, each Option that is not an Incentive Option but that is granted to a US Optionee shall have its Exercise Price set at or above the Fair Market Value per Share purchasable under such Option (determined as of the Grant Date of such Option) and otherwise shall be priced and shall be subject to such terms and conditions as required under Code Section 409A and the applicable US Tax Regulations and any applicable guidance thereunder in order to exempt such Option (to the maximum extent possible) from the requirements of Code Section 409A.

(d) Each Option Agreement will contain the Exercise Price determined for each Option covered thereby (but in any event, not less than the par value of the Share issuable upon exercise thereof).

(e) The consideration to be paid for the Shares to be issued upon exercise of an Option, including the currency and the method of payment, shall be determined by the Board and may consist entirely of (1) cash, (2) check, or (3) any combination of the foregoing methods of payment. Should the Company's ordinary shares be listed for trade on a Stock Exchange the Board may consider allowing a cashless exercise, subject to the provisions of Applicable Law. If, as of the date of exercise of an Option the Company then is permitting cashless exercises, the Optionees will be able to engage in a "same-day sale" cashless brokered exercise program, involving one or more brokers, through such a program that complies with the Applicable Laws (including without limitation the requirements of Regulation T and other applicable regulations promulgated by the Federal Reserve Board) and that ensures prompt delivery to the Company of the amount required to pay the Exercise Price and any tax, provided, however, that for any cashless-exercise right to be effective with respect to an Incentive Option, such right shall be set forth in the original Option Agreement for such Incentive Option.

(f) The proceeds received by the Company from the issuance of Shares subject to the Options will be added to the general funds of the Company and used for its corporate purposes.

8. Vesting of the Options

(a) Subject to the provisions of the Plan, each Option shall vest and become exercisable commencing on the Vesting Date thereof, as determined by the Board, for the number of Shares as shall be provided in the Option Agreement. However, no Option shall be exercisable after the Expiration Date. Unless otherwise determined by the Board with respect to any, some or all Options, each Option shall vest over a 4-year period from the Date of Grant (and with respect to employees, from the date of commencement of employment in the Company), with one quarter of such Option becoming vested on the first anniversary of such date, and the remaining portion in equal parts every quarter from the first anniversary and until the forth anniversary of such date or as otherwise indicated in the Optionee's Option Agreement.

(b) An Option may be subject to such other terms and conditions on the time or times when it may be exercised (including by way of performance conditions), as the Board may deem appropriate. The vesting provisions of individual Options may vary.

(c) Unless determined otherwise by the Board, the vesting of the Options shall be postponed during any un-paid leave of absence. Upon return to service, the vesting shall continue and the Vesting Dates shall be postponed in accordance with the period of un-paid leave. Despite the aforementioned, the following shall not postpone the vesting of the Options: paid vacation, sick leave, paid maternity leave, infant care leave, medical emergency leave, and military reserve duty.

(d) The vesting of the options shall continue upon any transfer of an Optionee between the Company and any Affiliate or between Affiliates.

9. **Exercise of Option; Right as a Shareholder**

(a) Options shall be exercised by the Optionee by giving written notice to the Company and/or to any third party designated by the Company (the "**Representative**"), in such form and method as may be determined by the Board and when applicable, by the Trustee in accordance with the requirements of Section 102 of the Tax Ordinance, which exercise shall be effective upon receipt of such notice by the Company and/or the Representative and the full payment of the Exercise Price at the Company's principal office. The notice shall specify the number of Shares with respect to which the Option is being exercised. The notice of exercise is irrevocable and may not be rescinded or revised once it has been delivered to the Company.

(b) The Options may be exercised by the Optionee in whole at any time or in part from time to time, to the extent that the Options become vested and exercisable, prior to the Expiration Date, and provided that, subject to the provisions of section 10 below, the Optionee is employed by or providing services to the Company at all times during the period beginning with the Date of Grant and ending upon the date of exercise.

(c) Shares issued upon exercise of an Option shall be issued in the name of the Optionee, except for shares issued following the exercise of Approved 102 Options, which shall be issued to the Trustee for the benefit of the Optionee and held by the Trustee during the restricted period specified in Section 102 of the Tax Ordinance or for a longer period, if otherwise determined in the Optionee's Option Agreement. Prior to exercise and until the registration of the Optionee as holder of such Shares in the Company's register of shareholders, an Optionee, as such, shall have no right to vote or receive dividends or any other rights of or as a shareholder.

(d) An Option may not be exercised unless, at the time the Optionee gives the notice of exercise, the Optionee includes with such notice payment in cash or by bank check of all withholding taxes due, if any, on account of its acquired Shares under the Option or gives other assurance satisfactory to the Board and the Trustee of the payment of those withholding taxes.

(e) Shares shall not be issued pursuant to the exercise of an Option unless the exercise of such Option, the method of payment and the issuance and delivery of such Shares shall comply with Applicable Laws.

(f) Until the consummation of an IPO, unless the Company determines otherwise, any Shares issued upon exercise of Options (and securities of the Company issued with respect thereto) shall be voted by an irrevocable proxy (the "**Proxy**") in the same manner as the votes of the other shareholders of the Company present and voting at the applicable meeting as determined by the Board, such Proxy to be assigned to the person or persons designated by the Board and to provide for the power of such designated person(s) to act, instead of the Optionee and on its behalf, with respect to any and all aspects. The Proxy may be contained in the Option Agreement of an Optionee or otherwise as the Board determines. If contained in the Option Agreement, no further document shall be required to implement such Proxy, and the signature of the Optionee on the Option Agreement shall indicate approval of the Proxy thereby granted. Such person or persons designated by the Board shall be indemnified and held harmless by the Company against any cost or expense (including counsel fees) reasonably incurred by him/her, or any liability (including any sum paid in settlement of a claim with the approval of the Company) arising out of any act or omission to act in connection with the voting of such Proxy unless arising out of such person's own fraud or bad faith, to the extent permitted by applicable law. Such indemnification shall be in addition to any rights of indemnification the person(s) may have as a director or otherwise under the Company's Articles of Association as amended from time to time (the "**Articles of Association**"), any agreement, any vote of shareholders or disinterested directors, insurance policy or otherwise. Without derogating from the above, with respect to Shares issuable upon exercise of Approved 102 Options, such Shares shall be voted in accordance with the provisions of Section 102 and of any rules, regulations or orders promulgated thereunder, to the extent applicable.

(g) Optionee shall not have any of the rights or privileges of shareholders of the Company in respect of any Shares purchasable upon the exercise of any Options, until the Optionee shall

have exercised the Option, paid the Exercise Price and applicable tax thereof and been registered as holder of such Shares in the Company's register of shareholders upon exercise of the Options in accordance with the provisions of the Plan, but in case of Options and Shares held by the Trustee, subject to the provisions of Section 13 below.

(h) If any law or regulation requires the Company to take any action with respect to the Shares specified in such notice of exercise before the issuance thereof, then the date of their issuance shall be extended for the period necessary to take such action.

(i) Exercise of an Option in any manner shall result in a decrease in the number of Shares thereafter available, both for purposes of the Plan and for exercise under the Option, by the number of Shares as to which the Option is exercised.

10. Termination of Employment

(a) Unless the Board shall otherwise determine at or after issuance, in the event of termination of Optionee's employment with the Company or an Affiliate other than for Cause, Disability, retirement or death, or if applicable, the termination of services rendered by the Optionee to the Company or an Affiliate other than for Cause, Disability or death, all Options issued to that Optionee, which are vested and exercisable at the time of such termination, may, unless earlier terminated in accordance with the provisions of the Plan or the Option Agreement, be exercised within three (3) months after the date of such termination but in any event, no later than the Expiration Date. If, on the date of termination, the Shares subject to the Option have not vested in their entirety, any Shares covered by the unvested portion of the Option shall expire and be of no further force and effect and revert to the Plan. To the extent the vested portion of the Option is not so exercised and fully paid for within the time specified herein, such unexercised vested portion of the Option shall expire and be of no further force and effect, and the Shares covered by such unexercised vested portion of the Option shall revert to the Plan. For the avoidance of doubt - in the event that in connection therewith any Approved 102 Options are still held by the Trustee, the trust with respect thereto shall ipso facto expire and all of the Shares covered by the vested and unvested portion of such Approved 102 Options shall revert to the Plan and be subject to issuance if the Optionee did not exercise the Options within the above stated period. For the purposes of this section, termination of employment or engagement shall mean the date the termination notice was given by the Optionee or his/her employer (irrespective of the effective date of such termination), unless otherwise agreed to in writing.

(b) If the Optionee's employment with the Company or an Affiliate, or if applicable, the rendering of services by the Optionee to the Company or an Affiliate is terminated because of Optionee's death, retirement or Disability, then Optionee's Options may be exercised, only to the extent that such Options are vested and exercisable by Optionee on the termination date or as otherwise determined by the Board. Such Options must be exercised by Optionee (or Optionee's legal representative or authorized assignee), if at all, as to all or some of the then vested option calculated as of the termination date or such other date determined by the Board, within six (6) months after the termination date. If, on the date of termination, there are Options, which have not vested, the Shares covered by the unvested portion of the Options shall revert to the Plan. If the Option is not so exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan. For the avoidance of doubt - in the event that in connection therewith any Approved 102 Options are still held by the Trustee, the trust with respect thereto shall ipso facto expire and all of the Shares covered by the vested and unvested portion of such unexercised Approved 102 Options shall revert to the Plan and be subject to issuance.

(c) In the event of termination of Optionee's employment with the Company or an Affiliate for Cause, or if applicable, the termination of services rendered by the Optionee to the Company for Cause, all outstanding Options issued to such Optionee (whether vested or not) shall, to the extent not theretofore exercised, immediately expire and shall be of no further force and effect as of the date of such termination, unless otherwise determined by the Board.

(d) If the exercise of an Option following the termination of employment or service, as applicable, would be prohibited at any time solely because the issuance of Shares would violate

requirements of any Applicable Law, then the Option shall expire at the end of a period of ninety (90) days after the termination, or twelve (12) months after the date of death, as applicable, during which the exercise of the Option would not be in violation of such requirements.

(d) With respect to Unapproved 102 Option, if the Optionee ceases to be employed by the Company, the Optionee shall extend to the Company a security or guarantee for the payment of tax due at the time of sale of Shares, all in accordance with the provisions of Section 102 and the rules, regulations or orders promulgated thereunder as now in effect or as hereafter amended.

11. Adjustments

(a) **Changes in Capitalization**. Subject to any required action by the Company, the number of Shares covered by each outstanding Option, the number of Shares which have been reserved for issuance under the Plan but as to which no Options have yet been issued or which have been returned to the Plan upon cancellation or expiration of an Option, as well as the Exercise Price per share of Shares covered by each such outstanding Option, shall be proportionately adjusted for any increase or decrease in the number of issued Shares resulting from a share split, reverse share split, bonus shares (stock dividend), combination or reclassification of the Shares, all only if such triggering event generally applies to all Shares; provided, however that fractions of a Share will not be issued but will be rounded down to the nearest whole Share; and provided, further, that the Exercise Price of any Option may not be decreased to below the par value of the Shares. Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of any class, or securities convertible into shares of any class, shall affect, and no adjustment by reason thereof shall be made with respect to the number or the Exercise Price per Share subject to an Option. If the Options or the Shares issued upon the exercise of such Options will be deposited with a Trustee, as determined by the Board, all of the Shares formed by these adjustments also will be deposited with the Trustee in the same terms and conditions as the original Options or Shares.

(b) **Dissolution or Liquidation.** In the event of a dissolution or liquidation of the Company (whether voluntary or involuntary) (the "**Event**"), the Board shall notify each Optionee who holds unexercised Options as soon as practicable prior to the effective date of such Event. The Board in its sole discretion may allow the exercise of any or all outstanding Options, whether or not vested, within a reasonable period of time prior to the Event and subject to the provisions of the Applicable Laws. To the extent it has not been previously exercised, an Option will terminate immediately prior to the Event.

(c) **Merger, Acquisition, Shares sale, Assets Sale.**

(i) In the event of a Transaction, each outstanding unexercised Option shall be assumed or exchanged for an equivalent option or right substituted by the Successor Company or a parent or subsidiary of the Successor Company, and appropriate adjustments shall be made in the number of options (and respectively, in the Exercise Price per Share) in order to reflect such an action and to keep the Optionee harmless in all material respects due to the Transaction - all subject to the determination of the Board, which determination shall be in its sole discretion and final.

(ii) Notwithstanding the aforesaid and subject to any applicable law, the Board, at its sole and absolute discretion, shall have full power and authority to determine that the vesting periods defined in the Option Agreement shall be fully accelerated. If as a result of such acceleration an Option becomes fully vested and exercisable, in lieu of assumption or substitution in the event of a Transaction, the Board shall notify the Optionee in writing or electronically that the Option shall be fully exercisable for a period of fifteen (15) days from the date of such notice, and the Option shall terminate upon the expiration of such period if not exercised earlier by the Optionee.

(iii) Anything herein to the contrary notwithstanding, if a Transaction shall occur prior to the

consummation of an IPO, then each Optionee shall be obliged to sell or exchange, as the case may be, any Shares such Optionee purchased under the Plan, in accordance with the instructions of the Board, at its sole and absolute discretion, in connection with the Transaction, and in the same terms as shall be determined to all the shareholders of the Company.

(iv) For the purposes of this paragraph, the Option shall be considered assumed or exchanged if, following a Transaction, the Optionee receives the right to purchase or receive, for each Share subject to the Option immediately prior to the Transaction, the consideration (whether shares, cash, or other securities or property) received in the Transaction by holders of Shares for each Share held on the effective date of the Transaction (and if such holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the Transaction is not solely ordinary shares of the Successor Company or its parent or subsidiary, the Board may, with the consent of the Successor Company, provide for each Optionee to receive whether in relation to vested and/or un-vested Options solely ordinary shares (or their equivalent) of the Successor Company or its parent or subsidiary equal in Fair Market Value to the per share consideration received by holders of Shares in the Transaction; and provided further that the Board may determine, in its discretion that in lieu of such assumption or substitution of Options for options of the Successor Company, or its parent or subsidiary, such Options or a portion thereof will be substituted for any other type of asset or property including cash which is fair under the circumstances.

(vi) Notwithstanding anything to the contrary in this Section 11, upon a Transaction, the Board in its sole and absolute discretion may determine that all outstanding, unexercised Options granted under the Plan, whether vested or unvested, will be cancelled for no consideration.

(vii) Without derogating from the above, in the event of a Transaction the Board shall be entitled, at its sole discretion, to require the Optionees to exercise all vested Options within a set time period and sell all of their Shares on the same terms and conditions as applicable to the other shareholders selling their Company's ordinary shares as part of the Transaction. Each Optionee acknowledges and agrees that the Board shall be entitled to authorize any one of its members to sign share transfer deeds in customary form in respect of the Shares held by such Optionee and that such share transfer deed shall bind the Optionee.

(viii) Despite the aforementioned, if and when the method of treatment of Options within the scope of a Transaction determined according to the above will in the sole opinion of the Board prevent the Transaction from occurring, or materially risk the Transaction, the Board may determine different treatment for different Options held by Optionees such that not all Options will be treated equally within the scope of the Transaction.

(ix) The issuance of Options under the Plan shall in no way affect the right of the Company to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

(d) **Structural Change**

In the event of a Structural Change the Shares underlying the Options subject to the Plan shall be exchanged or converted into shares of the Company or Successor Company in accordance with the exchange effectuated in relation to the ordinary shares of the Company, and the Exercise Price and quantity of shares shall be adjusted in accordance with the terms of the Structural Change. The adjustments required shall be determined in good faith solely by the Board.

(e) **Spin-Off Transaction**

In the event of a Spin-Off Transaction, the Board may determine that the holders of Options shall be entitled to receive equity in the new company formed as a result of the Spin-Off Transaction, in accordance with equity granted to the ordinary shareholders of the Company within the Spin-Off Transaction, taking into account the terms of the Options, including the vesting schedule and Exercise Price. The determination regarding the Optionee's entitlement within the scope of a Spin-Off Transaction shall be in the sole and absolute discretion of the Board.

12. Designation of Options Pursuant to Section 102

(a) The Board may designate Options issued to Employees pursuant to Section 102 of the Tax Ordinance as either CGO or OIO.

(b) The Company's Election (as defined in Section 2(hh) above) of the type of Approved 102 Options to be issued to Employees, shall become effective beginning the first Date of Grant of an Approved 102 Option under the Plan and shall remain in effect until at least the end of the year following the year during which the Company first issued Approved 102 Options. The Election shall obligate the Company to issue only the type of Approved 102 Option it has elected, and shall apply to all Approved 102 Options issued during the period indicated herein, all in accordance with the provisions of Section 102(g) of the Tax Ordinance. For the avoidance of doubt, such Election shall not prevent the Company from issuing Unapproved 102 Options or 3(i) Options, simultaneously.

(c) No Approved 102 Options may be issued under this Plan to any person, unless and until, the Plan and the Company's Election shall be appropriately filed with the Israeli Tax Authorities at least thirty (30) days before the first Date of Grant of an Approved 102 Option under this Plan.

(d) Each Option Agreement shall state, *inter alia*, the type of Option issued thereunder (whether a CGO, OIO, Unapproved 102 Option or a 3(i) Option), the vesting provisions and the Exercise Price.

(e) All Approved 102 Options must be held in trust by a Trustee, as described in Section 13 below.

(f) For the avoidance of doubt, the designation of Unapproved 102 Options and Approved 102 Options shall be subject to the terms and conditions set forth in Section 102 of the Tax Ordinance.

(g) With regard to Approved 102 Options, the provisions of the Plan and the Option Agreement shall be subject to the provisions of Section 102 of the Tax Ordinance and the Tax Assessing Officer's permit, and the said provisions and permit shall be deemed an integral part of the Plan and of the Option Agreements. Any provision of Section 102 of the Tax Ordinance and/or the said permit which is necessary in order to receive and/or to keep any tax benefit pursuant to Section 102 of the Tax Ordinance, which is not expressly specified in the Plan or the Option Agreement, shall be considered binding upon the Company and the Optionees.

13. Trustee

(a) The Board may choose to deposit any or all Options issued pursuant to the Plan with a Trustee. In such event, the Trustee shall hold such Options, and any Shares issued upon the exercise of any of such Options, in trust pursuant to the Company's instructions from time to time. The Trustee shall be entitled to make such provisions and take such steps as it may deem necessary or appropriate for the withholding of all taxes required by law to be withheld with respect to the exercise of the Options or their sale to a third party. The Company shall deliver the Trustee all the necessary information required by him. The Trustee shall be exempt from any liability with respect to any action or decision duly taken in its/his capacity as Trustee, provided however that the Trustee has conducted his duties with due diligence and with no misconduct and bad faith.

(b) Anything herein to the contrary notwithstanding, Approved 102 Options issued under the Plan and/or all Shares allocated or issued upon exercise of such Approved 102 Options and/or all other shares received subsequently following any realization of rights in connection with such Approved 102 Options or Shares and all rights attached to shares described above or Approved

102 Options, shall be allocated or issued to the Trustee and held for the benefit of the Optionee for such period of time as required by Section 102 of the Tax Ordinance or any Rules promulgated thereunder as now in effect or as hereafter amended (the **"Restricted Period Per Section 102"**). All of the rights attached to Shares issued upon exercise of Approved 102 Options, including without limitation dividend in shares, shall be subject to the same tax treatment as the treatment to which such Options are subject to.

(c) Notwithstanding anything to the contrary, the Trustee shall not make any transaction or take any action with respect to Approved 102 Options or Shares issued upon exercise thereof, will not transfer, assign, release, pledge, mortgage voluntarily, or grant in connection therewith any proxy or assignment deed, whether immediately effective or effective at a future date, other than by will or by operation of law, until after the full payment of the Optionee's tax liabilities arising from the issuance of such Options or their exercise or release or transfer by the Trustee or after guarantying the payment of said taxes. If such Options or Shares have been transferred by will or by operation of law, the provisions of Section 102 of the Tax Ordinance will apply with respect to the heirs or the transferees of the Optionee or shareholder, as the case may be.

(d) Upon receipt of an Approved 102 Option, the Optionee will sign an undertaking to release the Trustee from any liability in respect of any action or decision duly taken and bona fide executed in relation with the Plan, or any Approved 102 Option or Share held, released or transferred by the Trustee, in accordance with the terms of Section 102 of the Tax Ordinance.

(e) Subject to the provisions of Section 102 of the Tax Ordinance during the Restricted Period per Section 102 an Optionee may not release the Approved 102 Options or Shares issued upon exercise thereof from trust or sell such Options or Shares while they are held by the Trustee. At any time thereafter each Optionee may require (but shall not be obligated to require) the Trustee to sell upon Optionee's direction, or transfer to the Optionee, any Approved 102 Options or Shares issued pursuant to the exercise of such Approved 102 Options, provided that (1) such transfer is in compliance with all Applicable Laws, and (2) all applicable tax due pursuant to such a sale or transfer has been paid in accordance with Section 102 of the Tax Ordinance and the Trustee has received an acknowledgment from the Israeli Tax Authorities that the Optionee has paid any applicable tax due pursuant to the Tax Ordinance. Notwithstanding the above, if any such sale or release occurs during the Restricted Period per Section 102, the sanctions under Section 102 of the Tax Ordinance shall apply to and shall be borne by such Optionee.

(f) Should the Approved 102 Options or any Shares issued in connection with such Approved 102 Options be transferred by power of a last will or under laws of decent, the provisions of Section 102 shall apply to the heirs or transferees of the deceased Participant.

(g) Approved 102 Options that do not comply with the requirements of Section 102 shall be considered Unapproved 102 Options or 3(i) Options.

14. Purchase For Investment; Limitations Upon IPO; Representations

(a) The Company's obligation to issue or allocate Shares upon exercise of an Option issued under the Plan is expressly conditioned upon: (a) the Company's completion of any registration or other qualifications of such Shares under all applicable laws, rules and regulations or (b) representations and undertakings by the Optionee (or his legal representative, heir or legatee, in the event of the Optionee's death) to assure that the sale of the Shares complies with any registration exemption requirements which the Company in its sole discretion shall deem necessary or advisable. Such required representations and undertakings may include representations and agreements that such Optionee (or his legal representative, heir, or legatee) is purchasing such Shares for investment and not with any present intention of selling or otherwise disposing thereof.

(b) The Optionee acknowledges that in the event that the Company's shares shall be registered for trading in any stock exchange or public market, Optionee`s rights to sell the Shares may be subject to certain limitations (including a lock-up period), as will be requested by the Company or its underwriters, and the Optionee unconditionally agrees and accepts any such limitations. However, the Company does not undertake to cause the ordinary shares or the Shares to be listed on a Stock Exchange, or that the registration of the ordinary shares or the Shares for trade, if at all, shall take place within a certain period of time.

(c) Upon the issuance of Options to an Optionee or the issuance of Shares upon the exercise thereof, the Company shall be entitled to obtain from such Optionee the representations and undertakings as follows, as well as such other representations and undertakings the Board deems necessary:

(i) That the Optionee is familiar with the Company, its activity and its financial and commercial forecast, and that the Optionee knows that there is no certainty that the exercise of the Options will be financially worthwhile. The Optionee hereby undertakes not to have any claim against the Company or any of its directors, Employees, shareholders or advisors if it emerges, at the time of exercising the Options, that the Optionee's investment in the Company's Shares was not worthwhile, for any reason whatsoever.

(ii) That the Optionee knows that his rights regarding the Options and the Shares are subject for all intents and purposes to the instructions of the Company's documents of incorporation and to the agreements of the shareholders in the Company.

(iii) That the Optionee knows that in addition to the allocations set forth above, the Company has allocated and/or is entitled to allocate Options and Shares to other Employees and other people, and the Optionee shall have no claim regarding such allocations, their quantity, the relationship among them and between them and the other shareholders in the Company, exercising of the options or any matter related to or stemming from them.

(iv) That the Optionee knows that neither the Plan nor the issuance of Option or Shares thereunder shall impose any obligation on the Company to continue the engagement of the Optionee, and nothing in the Plan, in his respective Option Agreement or in any Option or Shares issued pursuant thereto shall confer upon any Optionee any right to continue being engaged by the Company, or restrict the right of the Company to terminate such engagement at any time.

15. Dividends

With respect to all Shares (but excluding, for avoidance of any doubt, any unexercised Options) allocated or issued upon the exercise of Options purchased by the Optionee and held by the Optionee or by the Trustee, as the case may be, the Optionee shall be entitled to receive dividends in accordance with the quantity of such Shares, subject to the provisions of the Company's Articles of Association (and all amendments thereto) and subject to any applicable taxation on distribution of dividends, and, when applicable, subject to the provisions of Section 102 of the Tax Ordinance.

16. Restrictions On Assignability and Sale of Options/Shares

(a) No Option nor any right with respect thereto, purchasable hereunder, whether fully paid or not, shall be assignable, transferable or given as collateral or any right with respect to it given to any third party whatsoever, except as specifically allowed under the Plan, and during the lifetime of the Optionee each and all of such Optionee's rights to purchase Shares hereunder shall be exercisable only by the Optionee.

Any such action made directly or indirectly, for an immediate validation or for a future one, shall be void.

(b) So long as Options and/or Shares are held by the Trustee on behalf of the Optionee, all rights of the Optionee over the Shares are personal, can not be transferred, assigned, pledged or mortgaged, other than by will or pursuant to the laws of descent and distribution.

17. Amendment and Termination of the Plan

(a) Subject to Applicable Laws, the Board may, at any time and from time to time, terminate, alter, adjust, suspend or amend the Plan in any respect, except that if at any time the approval of the

shareholders of the Company is required pursuant to the Israeli Companies Law, 1999, under Section 57, the Board may not effect such modification or amendment without such approval. In no event may any action of the Company materially and adversely alter or impair the rights of an Optionee, without such Optionee's consent, under any Option previously issued to such Optionee.

(b) Termination of the Plan shall not affect the Board's ability to exercise the powers granted to it hereunder with respect to Options issued under the Plan prior to the date of such termination.

18. Integration of Section 102 And Tax Commissioner's Permit

(a) With regard to Approved 102 Options, the provisions of the Plan and/or the Option Agreement shall be subject to the provisions of Section 102 of the Tax Ordinance and the Income Tax Commissioner's permit, and the said provisions and permit shall be deemed an integral part of the Plan and of the Option Agreement.

(b) Any provision of Section 102 of the Tax Ordinance and/or the said permit which is necessary in order to receive and/or to keep any tax benefit pursuant to Section 102 of the Tax Ordinance, which is not expressly specified in the Plan or the Option Agreement, shall be considered binding upon the Company and the Optionees.

19. Shares Subject to Right of First Refusal

(a) Notwithstanding anything to the contrary in the incorporation documents of the Company, none of the Optionees shall have a right of first refusal in relation with any sale of shares in the Company.

(b) Unless otherwise determined by the Board, until such time as the Company shall complete an IPO, an Optionee shall not have the right to sell Shares issued upon the exercise of an Option within six (6) months and one day of the date of exercise of such Option or issuance of such Shares.

(c) Sale of Shares by the Optionee shall be subject to a right of first refusal as set forth in the incorporation documents of the Company or any shareholders, investors' rights, right of first refusal or similar agreement(s) by which some or all holders of the ordinary shares of the Company are bound. In the event that the incorporation documents or such agreements of the Company do not contain any provision regarding rights of first refusal, then, unless otherwise determined by the Board, until such time as the Company shall complete an IPO, the sale of Shares issuable upon the exercise of an Option shall be subject to a right of first refusal on the part of the Repurchaser(s).

Repurchaser(s) means (i) the Company, if permitted by Applicable Law; (ii) if the Company is not permitted by Applicable Law, then any Affiliate of the Company designated by the Board; or (iii) if no decision is reached by the Board, then the Company's then existing shareholders who hold more than 2% of the then issued and outstanding share capital of the Company (save, for avoidance of doubt, for other Optionees who already exercised their Options), pro rata in accordance with their respective shareholding.

The Optionee shall give a notice of sale (the "Notice") to the Company in order to offer the Shares to the Repurchaser(s).

(d) The Notice shall specify the name of each proposed purchaser or other transferee (the "Proposed Transferee"), the number of Shares offered for sale, the price per Share and the payment terms. The Repurchaser(s) will be entitled for thirty (30) days from the day of receipt of the Notice (the "Notice Period"), to purchase all or part of the offered Shares on a pro rata basis based upon their respective holdings in the Company.

(e) If by the end of the Notice Period not all of the offered Shares have been purchased by the Repurchaser(s), the Optionee shall be entitled to sell all Shares at any time during the ninety (90) days following the end of the Notice Period on terms not more favorable than those set out in the Notice, provided that the Proposed Transferee agrees in writing that the provisions of this Section shall continue to apply to the Shares in the hands of such Proposed Transferee. Any sale of Shares issued under the Plan by the Optionee that is not made in accordance with the Plan or the Option Agreement shall be null and void.

(f) The Board shall be entitled not to approve and/or recognize a transfer of Shares if such a transfer has not been performed in accordance with the provisions of this Article 20.

(g) In the event that the Optionee's Shares shall be over-subscribed, each Repurchaser shall be entitled to purchase his pro-rata share of the Shares (calculated by dividing each acquiring Repurchaser's rates of holdings or beneficial ownership in the Company, by the aggregate rates of holdings or beneficial ownership in the Company of all the Repurchasers who wish to acquire the Shares).

(h) Without derogating from the aforementioned, and in addition thereto, any sale of Shares in accordance with this Article 17 shall be subject to the prior approval of the Board. The Board acknowledges that the transfer of equity securities prior to a liquidity event (e.g. an IPO, a Deemed Liquidation event or a Transaction) may not be in the best interest of the Company and therefore, other than in case of death, estate planning, gift to family members or divorce, the transfer of ordinary shares (including without limitation, a transfer in accordance with this section 20) should be closely monitored, controlled and rarely approved by the Board. The Board further acknowledges the fact that a "secondary market" for private company shares is evolving and shareholders are offered opportunities to transfer their ordinary shares. As such, the Board: (i) will be entitled, at its sole and absolute discretion (without the obligation to provide information with respect to discussions held by the Board regarding such transfer or the necessity to justify its resolution), to refuse to approve any transfer of ordinary shares, and in case of a refusal, any attempt to transfer ordinary shares will (by way of contract, promise unilateral commitment or otherwise) be of no force and effect, null and void and disregarded by the Company; (ii) will not allow the transfer of ordinary shares, unless the transfer is coordinated with the Company and the shareholder will agree to terms set by the Company (among other things, with respect to price paid for the shares, duration of holding of such shares, agreement to participate in any liquidity event (and be bound by the terms set in such an event) etc).

(i) For the avoidance of doubt it is clarified that any Shares transferred in accordance with this section 20, shall, unless otherwise determined by the Board, be subject to the proxy executed by the Optionee in accordance with section 9(f) above and the applicable Option Agreement. In addition, the proxy shall lapse upon a Transaction or upon or after an IPO of the Company.

20. General Provisions

(a) **Withholding**. The Company shall have the right to deduct from all amounts payable to an Optionee in cash (whether under this Plan or otherwise) any taxes required by law to be withheld in respect of Options under this Plan. In the case of any Option satisfied in the form of Shares, no shares shall be issued unless and until arrangements satisfactory shall have been made to satisfy any withholding tax obligations applicable with respect to such Option. Without limiting the generality of the foregoing and subject to such terms and conditions as the Board may impose, the Company shall have the right to retain, or the Board may, subject to such terms and conditions as it may establish from time to time, permit Optionees to elect to tender, Shares (including Shares issuable in respect of an Option) to satisfy, in whole or in part, the amount required to be withheld.

(b) **Condition to Exercise**. As a condition to the exercise of an Option, the Board may require the person exercising such Option to represent and warrant at the time of such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required. The Company may place a legend on each share certificate to the effect that such shares were acquired pursuant to an investment representation and are subject to limitations on offers, transfers and sales as the case may be.

(c) **Compliance with Legal and Exchange Requirements**. The Plan, the issuing and exercising of Options thereunder, and the other obligations of the Company under the Plan, shall be subject to all Applicable Laws, rules and regulations, and to such approvals by any regulatory or governmental agency as may be required. To the extent required in order to comply with Applicable Law, the Company, in its discretion, may postpone the issuing and exercising of Options, the issuance or delivery of Shares under any Option, or any other action permitted under the Plan. The Company may be permitted, with reasonable diligence, to complete such stock exchange, or similar listing, registration, qualification of such Shares or other required action under any Applicable Law, rules, or regulations. The Company may require any Optionee to make such representations and furnish such information, as it may consider appropriate in connection with the issuance or delivery of Shares in compliance with Applicable Laws, rules, and regulations. The Company shall not be obligated by virtue of any provision of the Plan to recognize the exercise of any Option or to otherwise sell or issue Shares in violation of any such laws, rules, or regulations.

Notwithstanding any other provision in this Plan, the Company will have no obligation to issue or deliver certificates for Shares under this Plan prior to (i) obtaining any approvals from governmental agencies that the Company determines are necessary or advisable, and/or (ii) compliance with any exemption, completion of any registration or other qualification of such Shares under any applicable laws or ruling of any governmental body that the Company determines to be necessary or advisable. The Company will be under no obligation to register the Shares with the Securities and Exchange Commission or to effect compliance with the exemption, registration, qualification or listing requirements of any state securities laws, stock exchange or automated quotation system, and the Company will have no liability for any inability or failure to do so.

(d) **Gender and Number**. Except when otherwise indicated by the context, words in the masculine gender used in the Plan shall include the feminine gender, the singular shall include the plural, and the plural shall include the singular.

(e) **Governing Law and Jurisdiction.** The validity, construction, interpretation, administration and effect of the Plan and any rules, regulations and actions relating to the Plan will be governed by and construed exclusively in accordance with the laws of the State of Israel, notwithstanding the conflicts of laws principles of any jurisdiction. The competent courts in Tel Aviv shall have sole and exclusive jurisdiction over any dispute with regard to any controversy or claim arising under, out of, or in connection with this Plan, its validity, its interpretation, its execution or any breach or claimed breach thereof.

21. Date of Grant

Subject to Applicable Laws, the Date of Grant of an Option shall, for all purposes, be the date on which the Board makes the determination issuing such Option or such later date as shall be determined by the Board.

22. Tax Consequences

Any tax consequences and/or obligations regarding other compulsory payments arising from the issuance or exercise of any Option, from the payment for or from the disposition of Shares covered thereby or from any other event or act (whether of the Optionee, of the Company, of any Subsidiaries or of the Trustee) hereunder, shall be borne solely by the Optionee. The Company and/or the Trustee shall withhold taxes according to the requirements under the Applicable Laws, rules, and regulations,

including withholding taxes at source. Furthermore, such Optionee shall agree to indemnify the Company and/or the Trustee, and/or the Company's shareholders and/or directors and/or office holders if applicable, and hold them harmless against and from any and all liability for any such tax or interest or penalty thereon, including without limitation, liabilities relating to the necessity to withhold, or to have withheld, any such tax (and compulsory payment, if any) from any payment made to the Optionee. Except as otherwise required by law, the Company shall not be obligated to honor the exercise of any Option by or on behalf of an Optionee until all tax consequences (if any) arising from the exercise of such Options are resolved in a manner reasonably acceptable to the Company.

23. Non-Exclusivity of the Plan

The adoption of the Plan by the Board shall not be construed as creating any limitations on the power of the Board to adopt such other incentive arrangements as it may deem desirable, including, without limitation, the issuing of Options otherwise than under the Plan, and such arrangements may be either applicable generally or only in specific cases.

24. Inability to Obtain Authority

The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

25. Multiple Agreements

The terms of each Option may differ from other Options issued to each Optionee under the Plan at the same time or at any other time. The Board may also issue more than one Option to a given Optionee during the term of the Plan, either in addition to, or in substitution for, one or more Options previously issued to that Optionee.

Adopted by the Board on December 16, 2011

נספח 15

הסכם הקצאת אופציות בין קורטיקה לאינישיטיבס מיום 15.10.2014.

Annex 15

The Option Allocation Agreement between Cortica and eNitiatives dated October 15, 2014.

CORTICA LTD. AMENDED AND RESTATED 2007 SHARE OPTION PLAN

Option Agreement for Consultant

Made effective on October 15, 2014

BETWEEN: **Cortica Ltd.**

A company incorporated in the State of Israel

(hereinafter the "**Company**")

on the one part;

AND: **eNitiatives – New Business Architects Ltd.**

I.D. 512836396

(hereinafter the "**Consultant**")

on the other part

WHEREAS On December 16, 2011 the Company adopted the Cortica Ltd. Amended and Restated 2007 Share Option Plan a copy of which is attached as **Exhibit A** hereto, forming an integral part hereof (the "**Plan**"); and

WHEREAS Pursuant to the Plan, the Company has decided to grant the Consultant Options as further detailed in **Exhibit B** hereto and the Consultant has agreed to such grant, subject to all the terms and conditions as set forth in the Plan and as provided herein;

NOW, THEREFORE, it is agreed as follows:

1. **Preamble**

1.1 The preamble to this Option Agreement constitutes an integral part hereof.

1.2 Unless otherwise defined herein, capitalized terms used herein shall have the meaning ascribed to them in the Plan.

1.3 In this Option Agreement the term "Option(s)" shall be construed as relating to 3(i) Options granted to the Consultant hereunder. A "Consultant" shall mean any person or entity, except an Employee, engaged by the Company or an Affiliate, in order to render services to such company, including any individual engaged by an entity providing services to the Company or an Affiliate as aforementioned.

1.4 In the event of a conflict between the terms and conditions of the Plan and the terms and conditions of this Option Agreement, the terms and conditions of the Option Agreement shall prevail.

2. **Grant of Options**

The Company hereby grants the Consultant 3(i) Options as set forth in **Exhibit B** and subject to the terms and the conditions as set forth in the Plan and as provided herein.

3. **Vesting**

The Consultant's Options shall vest according to the Vesting Dates set forth in **Exhibit B** and as long as he continues to provide services to the Company.

4. **Expiration**

The Options shall expire on the earlier of: (i) the time such Option is fully exercised, or (ii) the expiration of the periods included in section 10 or 11 of the Plan, or (iii) ten (10) years from the Date of Grant of such Options.

5. **Exercise of Options**

5.1 The Options may be exercised by the Consultant in whole or in part, at all times during the period beginning on the Vesting Date and ending upon the Expiration Date, at the Consultant's sole election, and to the extent that the Options become vested and exercisable, and subject to the provisions of the Plan and this Option Agreement. The Options may be exercised during the lifetime of the Consultant only by the Consultant.

5.2 Options shall be exercised by the Consultant according to the provisions of the Plan and this Option Agreement. No Shares shall be issued pursuant to the exercise of an Option unless all applicable taxes have been paid and such issuance and exercise complies with Applicable Laws.

5.3 The Options may be exercised only to purchase whole Shares, and in no case may a fraction of a Share be purchased. If any fractional Shares would be deliverable upon exercise, such fraction shall be rounded up one-half or more, or otherwise rounded down, to the nearest whole number.

5.4 Following the exercise of any Option to the full satisfaction of the Company, including the payment of the Exercise Price and any Tax, the Company shall issue, list and register the Shares in the name of the Trustee for the benefit of the Consultant.

6. **Proxy**

As long as the Company's ordinary shares are not traded on a Stock Exchange, any Shares issued to the Consultant under the Plan and this Option Agreement shall be voted by an irrevocable proxy, attached hereto as **Exhibit C** (the "**Proxy**"). The Proxy shall be assigned to the person or persons designated by the Board.

7. **Non-Transferability of Options and Shares.**

7.1 These Options may not be transferred in any manner otherwise than by will or by the laws of descent. The terms of the Plan and this Option Agreement shall be binding upon the executors, administrators, heirs, successors and assigns of the Consultant.

7.2 The Shares shall be transferable only according to the provisions of the Plan.

8. **Taxes; Indemnification**

8.1 The Options are intended to be taxed in accordance with Section 3(i) of the Tax Ordinance. Consultants with dual residency for tax purposes may be subject to taxation in several jurisdictions.

8.2 Any Tax imposed in respect of the Options and/or Shares, including, but not limited to, the grant of Options, and/or the exercise of an Option, and/or the transfer, waiver, or expiration of Options and/or Shares, and/or the sale of Shares, shall be borne solely by the Consultant, and in the event of death, by their heirs. The Company, any Affiliate or anyone on their behalf shall not be required to bear the aforementioned Taxes, directly or indirectly, nor shall they be required to gross up such Tax in the Consultant's remuneration. The applicable Tax shall be withheld from the proceeds of sale of Shares or shall be paid to the Company or an Affiliate by the Consultant. Without derogating from the aforementioned, the Company or an Affiliate shall be entitled to withhold Taxes as it deems complying with Applicable Laws and to deduct any Taxes from payments otherwise due to the Consultant from the Company or an Affiliate. The ramifications of any future modification of Applicable Laws regarding the taxation of the Options granted to Consultant shall apply to the Consultant accordingly and the Consultant shall bear the full cost thereof, unless such modified laws expressly provide otherwise.

8.3 The Consultant will not be entitled to receive from the Company or the Trustee any Shares allocated or issued upon the exercise of Options or in respect thereto, prior to the full payments of any Tax.

8.4 For the purpose of this Option Agreement "Tax" shall mean any applicable tax and other compulsory payments such as social security and health tax contributions required to be paid under any Applicable Laws in relation to the Options or the rights deriving therefrom.

9. **Privacy Protection**

The Consultant hereby authorizes the Company to provide third parties assisting in the implementation of the Plan with any information required for the purpose of administering the Plan, including without limitation information about the Consultant's Options, Shares, income tax rates, salary bank account, contact details and identification number.

10. **Miscellaneous**

10.1 **Confidentiality**. The Consultant shall regard the information in this Option Agreement and its exhibits attached hereto as confidential information and the Consultant shall not reveal its contents to anyone except when required by law or for the purpose of gaining legal or tax advice.

10.2 **Continuation of Service.** This Option Agreement shall not impose any obligation on the Company or an Affiliate to continue the Consultant's service and nothing in this Option Agreement shall confer upon the Consultant any right to continue in the service of the Company or an Affiliate or restrict the right of the Company or an Affiliate to terminate the service at any time.

10.3 **Amendments and Modifications.** This Option Agreement may be amended or modified only by a written document executed by the Company and the Consultant.

10.4 **Third Parties.** Nothing in this Option Agreement shall create or confer upon any person or entity, other than the parties hereto, any rights, remedies, obligations or liabilities.

10.5 **Entire Agreement.** This Option Agreement, together with the exhibits hereto, including the Plan, constitutes the entire agreement between the Consultant and the Company with respect to Options granted hereunder, and supersedes all prior agreements, understandings and arrangements, oral or written, between the Consultant and the Company with respect to the subject matter hereof.

10.6 **Failure to Enforce - Not a Waiver.** The failure of any party to enforce at any time any provisions of this Option Agreement shall in no way be construed to be a waiver of such provision or of any other provision hereof.

10.7 **Governing Law and Jurisdiction.** This Option Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Israel applicable to contracts made and to be performed therein, without giving effect to the principles of conflict of laws. The competent courts of Tel-Aviv, Israel shall have sole jurisdiction in any matters pertaining to the Plan.

10.8 **Binding Effect.** This Option Agreement shall be binding upon the heirs, executors, administrators and successors of the parties hereof.

10.9 **Severability.** If one or more of the provisions of this Option Agreement shall be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby and the invalid, illegal or unenforceable provisions shall be deemed null and void; however, to the extent permissible by law, any provisions which could be deemed null and void shall first be construed, interpreted or revised retroactively to permit this Option Agreement to be construed so as to foster the intent of this Option Agreement and the Plan.

By the Consultant's signature below she/he hereby:

(a) Acknowledges receipt of a copy of the Plan and accepts the Options subject to all of the terms and provisions of the Plan and this Option Agreement and declares that he/she has reviewed the Plan and this Option Agreement in their entirety.

(b) Declares that he/she has had an opportunity to obtain the advice of counsel prior to

executing this Option Agreement and fully understands all provisions of this Option Agreement and the Plan.

(c) Agrees to accept as binding, conclusive and final all decisions or interpretations of the Board upon any questions relating to the Plan and this Option Agreement.

Company's Signature:

Name: Karina Odinaev

Position: COO and VP Product

Signature: _____

Consultant's Signature:

Name: Reuven Marko

Signature: _____

Date: 25-Dec-14

Attachments: **Exhibit A:** **The Plan**

Attachments: **Exhibit B:** **Terms of the Options**

Attachments: **Exhibit C:** **Proxy**

EXHIBIT A

THE PLAN

EXHIBIT B

TERMS OF THE OPTIONS

Name of the Consultant:	eNitiatives – New Business Architects Ltd.
Date of Grant:	October 15, 2014

Share Options

Number of Share Options granted:	2,750 Options
Tax Route:	3(i) Options
Vesting Commencement Date:	N/A
Vesting Dates:	All options are fully vested.
Exercise Price:	$24.49
Expiration Date:	10 years from the Grant Date

Consultant

25-Dec-14

Date

Cortica Ltd.

EXHIBIT C

PROXY

The undersigned, as owner of securities of Cortical Ltd. (the "**Company**") described below, hereby irrevocably appoints the chairman of the board of directors of the Company or any Successor Company (as this term is defined in the Company's 2007 Share Option Plan), as appointed from time to time, as my proxy, instead of myself and on my behalf, with respect to any and all aspects of my shareholdings in the Company, including, without limiting the foregoing generality, the exercise of any and all powers and authorities vested within me in my capacity as a shareholder of the Company (in each of the foregoing cases, to the fullest extent that I will be entitled to act so, in the same manner and with the same effect as if the undersigned were personally present at any such meeting or voting such securities or personally acting on any matters submitted to shareholders for approval or consent.

This proxy is made pursuant to the Cortica Ltd. Amended and Restated 2007 Share Option Plan (the "**Plan**") and the Option Agreement signed between the undersigned and the Company on October 15, 2014.

The securities to be voted under this proxy, together with the securities represented by all other similar proxies granted by Participants under the Plan, shall be voted by the proxy-holder in the same proportion as the votes of the other shareholders of the Company present and voting at the applicable meeting or executing the written consent in lieu of meeting.

The proxy-holder shall waive any preemptive right, right of first refusal, right of first offer, co-sale right or any other similar participation right or restriction to which I will be entitled by virtue of the securities whether offered by the Company or any shareholder thereof.

This proxy is irrevocable as it may affect rights of third parties. The proxy-holder will have the full power of substitution and revocation. All authority herein conferred shall survive the death or incapacity of the undersigned and any obligation of the undersigned hereunder shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

The irrevocable proxy shall be deemed to be coupled with an interest and will remain in full force and effect until the closing of the underwritten initial public offering of the Company's ordinary shares pursuant to a registration statement filed with and declared effective under the Israeli Securities Law, 5728-1968, under the U.S. Securities Act of 1933, as amended, or under any similar law of any other jurisdiction, upon which it will terminate automatically.

This proxy shall be signed exactly as the shareholder's name appears on his share certificate. Joint shareholders must each sign this proxy. If signed by an attorney in fact, the Power of Attorney must be attached.

eNitiatives - New Business Architects Ltd.		25-Dec-14
NAME	SIGNATURE	DATE

נספח 16

התכתובת מיום 2.7.2014 בעניין המעבר ממשרד MW ל-M&B.

Annex 16

Correspondence dated July 2, 2014, on transferring from the MW Firm to M&B.

---------- Forwarded message ---------
From: **Or Agassi** <Or@hh-law.co.il>
Date: Wed, Jul 2, 2014 at 3:40 PM
Subject: RE: M&B IP Analysts invoices
To: Leron Kishoni <leron.kishoni@cortica.com>, Reuven Marko <reuven@hh-law.co.il>
Cc: Dina Eliasi <Dina.Eliasi@cortica.com>

Hi Leron,

M&B IP Analysts is a new company that Michael established who replaces Myers Wolin.

Best regards,

Or

From: Leron Kishoni [mailto:leron.kishoni@cortica.com]
Sent: Wednesday, July 2, 2014 6:14 AM
To: Or Agassi; Reuven Marko
Cc: Dina Eliasi
Subject: M&B IP Analysts invoices

Hi Or and Reuven,

This is the first time we received invoices from M&B IP Analysts.

Is this Myers Wolin? Did they change their name?

Thanks

Leron

---------- Forwarded message ----------
From: **Wendy Perrault** <wendy@mb-ip.com>
Date: Mon, Jun 30, 2014 at 11:29 PM
Subject: [Invoices] Your Ref.: COR-062, COR-065, COR-052, COR-005, COR-067, COR-069 | Our Ref.: CORT P0022, CORT P0023, CORT P0040, CORT P0045, CORT P0159, CORT P0162
To: "karina.odinaev@cortica.com" <karina.odinaev@cortica.com>
Cc: "leron.kishoni@cortica.com" <leron.kishoni@cortica.com>, "Dina.Eliasi@cortica.com" <Dina.Eliasi@cortica.com>, "Reuven Marko (reuven@hh-law.co.il)" <reuven@hh-law.co.il>, "Or Agassi (Or@hh-law.co.il)" <Or@hh-law.co.il>, Michael Ben-Shimon | M&B IP Analysts <michael@mb-ip.com>

Privileged and Confidential - Kindly confirm receipt.

RE: **Invoices: May through June Invoices**

Your Ref.: COR-062, COR-065, COR-052, COR-005, COR-067, COR-069

Our Ref.: P0022, P0023, P0040, P0045, P0159, P0162

USSN: 14/267,990; 14/280,928; 14/302,495; 14/302,487; 14/314,567; 14/314,579

Dear Mrs. Odinaev,

Attached please find our invoices in connection with the referenced filings. If you have any questions, please do not hesitate to contact us.

Kind regards,

Wendy Perrault
IP Administrator

Wendy Perrault | **M&B IP Analysts, LLC** | wendy@mb-ip.com

45 S. Park Place #262 | Morristown, NJ 07960-6834

T: +1-973-712-5424 | **F:** +1-908-325-0276

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נספח 17

העתק התכתובת בעניין התקציב וכן תכנית ע"ס 236,000 דולר מיום 16.2.2017.

Annex 17

A copy of the correspondence on the budget, as well as a plan at the amount of USD 236,000 dated February 16, 2017.

From: Asher Avital
To: or@enitiatives.biz
Cc: Igal Raichelgauz
Subject: Re: 2017 Budget
Date: Tuesday, January 31, 2017 5:25:05 PM

Please prepare minimal budget without loosing anything..

Asher Avital
CFO
Mobile: +972-50-6975097
Tel Aviv, Israel

On 31 2017 בינו', at 16:18, <or@enitiatives.biz> <or@enitiatives.biz> wrote:

As I expect we see+10 allowances this year and keep in mind the prosecution costs of the late-stage applications, the implications will be loss of all rights associated with ~50 provisional patent applications that were filed in 2016…

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Tuesday, January 31, 2017 3:42 PM
To: or@enitiatives.biz
Cc: Igal Raichelgauz
Subject: RE: 2017 Budget

Yes, whole budget.
Please let us know the implications.

Asher

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Tuesday, January 31, 2017 2:56 PM
To: 'Asher Avital' <asher.avital@cortica.com>
Subject: RE: 2017 Budget

Hi Asher,

Are you talking only on new applications? If you are talking about this whole budget, this will require abandonment of many applications for which conversion is to take place this year. I suggest we set a time to carefully review this. I am meeting Igal this Thursday at 11am so if you would like we can discuss this before/after.

Thanks,
Or

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Tuesday, January 31, 2017 1:46 PM
To: or@enitiatives.biz
Subject: 2017 Budget

Hi Or,
We would like to keep the IP budget for the year 2017 on average of $10K per month.
Can you please send us such plan.

Asher

May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	
7500	13500	7500	7500	13500	7500	7500	13500	
3000	3000	3000	3000	3000	3000	3000	3000	
3000	4000	3000	3000	4000	3000	3000	4000	
2600	3600	2600	2600	3600	2600	2600	3600	
750	1250	750	750	1250	750	750	1250	
16,850	25,350	16,850	16,850	25,350	16,850	16,850	25,350	236,200

2017					
Type		Jan-17	Feb-17	Mar-17	Apr-17
Milestone Fee		7500	7500	13500	7500
Legal Work (filing)		3000	3000	3000	3000
Legal Work (prosecution)		3000	3000	4000	3000
PTO Fees		2600	2600	3600	2600
Expenses		750	750	1250	750
	Total	16,850	16,850	25,350	16,850

Assumptions:
Conversion of 36 pending applications
Allowance of 1 pending applications each Q

נספח 18

פירוט החשבוניות 11.1.2017-22.3.2017 והתכתובות שנלוו לפירוט זה.

Annex 18

List of invoices, January 11, 2017 - March 22, 2017, and correspondence accompanying these details.

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From: or@enitiatives.biz
To: "Asher Avital"
Subject: COR-invoices-2017-20170403
Date: Monday, April 3, 2017 6:11:29 PM
Attachments: COR-invoices-2017-20170403.xlsb
Importance: High

Hi Asher,

The attached specifies the invoices sent since January 2017. Please note that there are additional invoices sent in 2016 that were not yet settled. As you can see, no new work was made unless specifically requested. Furthermore, most of the invoices were issued prior to your instructions to minimize the budget which we received during mid-February. We expect the expenses to be significantly lower in Q2, however in order to avoid any misunderstanding, I suggest we schedule a time to meet and discuss whether some applications are to be abandoned to save on costs. If you have any questions please let me know.

Best regards,
Or

File	Work	Invoice number	Date	Total
COR-206	Filing provisional	7493	11/01/2017	12,529.02
COR-032	Allowance	7502	11/01/2017	14,196.55
COR-143	Allowance	7506	11/01/2017	14,196.55
Expenses	Buying report (Approved by Igal)	7511	11/01/2017	8,112.31
COR-054	Allowance	7526	18/01/2017	14,067.55
COR-123	Allowance	7530	24/01/2017	14,532.99
COR-207	Filing of continuation (Approved by Igal)	7535	01/02/2017	13,890.65
COR-117	Allowance	7536	01/02/2017	11,685.78
COR-135	Filing of continuation (Approved by Igal)	7539	08/02/2017	5,490.23
COR-135	Filing of continuation (Approved by Igal)	7540	08/02/2017	11,639.28
COR-210	Filing provisional	***7541**	08/02/2017	12,210.26
COR-208	Formal PCT filing	7542	08/02/2017	11,639.28
COR-208	conversion to formal application	7543	08/02/2017	1,462.50
COR-167	Allowance	7571	15/03/2017	13,492.62
COR-121	conversion to formal application	7582	15/03/2017	11,350.93
COR-134	conversion to formal application	7583	15/03/2017	11,350.93
COR-133	conversion to formal application	7584	15/03/2017	11,350.93
General	Biz dev consulting	****7591**	22/03/2017	42,283.80
COR-139	conversion to formal application	7592	22/03/2017	11,205.21

*Sport analytics, approved by Igal

**biz dev consulting as per discussion with Asher

נספח 19

הצעת התקציב המעודכנת מיום 5.4.2017 והתכתובות שנלוו אליה.

Annex 19

Updated budget proposal dated April 5, 2017, and correspondence accompanying it.

From: or@enitiatives.biz
To: "Asher Avital"
Subject: RE: COR-invoices-2017-20170403
Date: Wednesday, April 5, 2017 8:29:53 PM
Attachments: COR-Cost-Est-2017-r07.xls

Hi Asher,

Attached per your request. Please note that there are some national phase applications to be filed in May and therefore time is of the essence. Also please note that the expected costs for 2017 are high due to the high number of applications filed in 2016 that have to be converted within 12 months. So, if you would like to maintain all the rights in the pending applications and not file any new applications in 2017, the projected costs for 2018 should be at least 50% less than 2017. Let me know if you would like me to prepare a two-years' projected budget.

If you have any questions please let me know.

Best regards,
Or

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Tuesday, April 4, 2017 9:29 PM
To: or@enitiatives.biz
Cc: Igal Raichelgauz
Subject: Re: COR-invoices-2017-20170403

Yes,

Asher Avital
CFO
Mobile: +972-50-6975097
Tel Aviv, Israel

On 4 2017 באפר', at 20:43, <or@enitiatives.biz> <or@enitiatives.biz> wrote:

> Assuming we maintain all applications?
>
> ---
>
> **From:** Asher Avital [mailto:asher.avital@cortica.com]
> **Sent:** Tuesday, April 4, 2017 8:40 PM
> **To:** or@enitiatives.biz
> **Cc:** Igal Raichelgauz
> **Subject:** Re: COR-invoices-2017-20170403

I'd like to have the expected cost of the current situation , based on it we can take decisions.

Asher Avital
CFO
Mobile: +972-50-6975097
Tel Aviv, Israel

On 4 באפר' 2017, at 17:38, <or@enitiatives.biz> <or@enitiatives.biz> wrote:

> Hi Asher,
>
> As instructed we have not and shall not file new applications.
>
> Regarding maintenance- last year we have filed a rather large amount of patent applications as per your instructions and therefore they are to be converted within 12 months otherwise all the associated rights shall be lost. The question is whether you would like to convert them to formal applications or not. If you want to significantly save on costs you will need to withdraw several of them. If you wish to consider that, I suggest we schedule a time to meet and review all the open provisional patent applications and decide whether or not to continue with them. If you do wish to maintain all the application filed, please let me know and I will send you expected costs. I just need you to be clear on what you want to do here so that there will be no surprises and I am of course at your disposal if you wish the discuss this.
>
> Best regards,
> Or
>
> ---
>
> **From:** Asher Avital [mailto:asher.avital@cortica.com]
> **Sent:** Tuesday, April 4, 2017 12:45 PM
> **To:** or@enitiatives.biz
> **Cc:** Igal Raichelgauz
> **Subject:** RE: COR-invoices-2017-20170403
>
> Or,
> Please hold any activity until we review the plan.
> Please send me the expected cost in 2017 – assuming maintenance only – no new patents.
>
> Asher

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Monday, April 3, 2017 6:12 PM
To: 'Asher Avital' <asher.avital@cortica.com>
Subject: COR-invoices-2017-20170403
Importance: High

Hi Asher,

The attached specifies the invoices sent since January 2017. Please note that there are additional invoices sent in 2016 that were not yet settled. As you can see, no new work was made unless specifically requested. Furthermore, most of the invoices were issued prior to your instructions to minimize the budget which we received during mid-February. We expect the expenses to be significantly lower in Q2, however in order to avoid any misunderstanding, I suggest we schedule a time to meet and discuss whether some applications are to be abandoned to save on costs. If you have any questions please let me know.

Best regards,
Or

May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	
10000	16500	7500	7500	16500	7500	7500	16500	
21000	15000	12000	12000	15000	12000	12000	15000	
6000	6000	4000	4000	6000	4000	4000	6000	
3200	3600	2600	2600	3600	2600	2600	3600	
1000	1250	750	750	1250	750	750	1250	
41,200	42,350	26,850	26,850	42,350	26,850	26,850	42,350	384,200

2017

Type		Jan-17	Feb-17	Mar-17	Apr-17
Milestone Fee		7500	7500	16500	5000
Legal Work (filing)		12000	12000	15000	3000
Legal Work (prosecution)		4000	4000	6000	2000
PTO Fees		2600	2600	3600	2000
Expenses		750	750	1250	500
	Total	26,850	26,850	42,350	12,500

Assumptions:
Conversion of 40 pending applications
Allowance of 3 pending applications each Q

נספח 20

הצעת התקציב מיום 4.5.2017 והתכתובות שנלוו אליה.

Annex 20

Budget proposal dated May 4, 2017, and our correspondence accompanying it.

From: or@enitiatives.biz
To: "Asher Avital"
Cc: "Igal Raichelgauz"
Subject: RE: COR-summary-2017-r02
Date: Thursday, May 4, 2017 3:44:36 PM

Confirmed

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Thursday, May 4, 2017 3:39 PM
To: or@enitiatives.biz
Cc: Igal Raichelgauz
Subject: RE: COR-summary-2017-r02

Hi Or,
Thnx,
So the additional cost for the remaining of the year is $221K for all recommended patents or $131K assuming refiling parts of the patents.
Please confirm.

Asher

From: or@enitiatives.biz [mailto:or@enitiatives.biz]
Sent: Thursday, May 4, 2017 2:11 PM
To: 'Asher Avital' <asher.avital@cortica.com>
Subject: COR-summary-2017-r02

Hi Asher,

Following our discussion- attached please find the estimated fees in case we keep all pending applications and priority dates.

If you have any questions please let me know.

Best regards,
Or

Docket	Status	Title	Dates	Expected costs for 2017	Score	Recommendation
COR-046	pending	An Apparatus and Methods Thereof for Determination of Causality Based on Correlation Between Data Objects within Big Data	Provisional Filed: 12-Feb-2013; Filed: 3-Feb-2014; Published on 5-Jun-2014	2700	5A	Keep
COR-076	pending	A Method for Identification of Multimedia Content Elements Based on Signatures and Environmental Variables	Provisional filed: 11-Oct-2013; Filed: 8-Oct-2014; Published: 22-Jan-2015	2700	5A	Keep
COR-031	pending	A System and Methods for Generation of Context Based on a Concept	Filed: 19-Feb-2013; Published: 25-Jul-2013	2700	4A	Keep
COR-042	pending	An Apparatus and Methods for Realtime Bidding Based on Concept Recognition of Audio/Video Inputs	Provisional filed: 15-mar-2013; 14-Mar-2014; Published: 17-Jul-2014	2700	4A	Keep
COR-075	pending	A System and Methods for Multimedia content Sharing	Provisional filed: 29-Sep-2013; Application filed: 29-Sep-2014; Published: 15-Jan-2015	2700	4A	Keep
COR-039	pending	An Apparatus and Methods for Visual Association of Applications to Content	Provisional filed: 14-mar-2013;Filed 13-Mar-2014; Published: 10-Jul-2014	2700	3A	Keep
COR-051	pending	Image Based Filters	Provisional Filed: 6-Mar-2013; Filed 5-Mar-2014; Filed: 29-May-2014; Published: 3-Jul-2014	2700	3A	Keep
COR-077	pending	A System and Methods for Identification of 3D Mulitmedia Content	Provisional filed: 13-Feb-2014; 11-Jun-2015	2700	3A	Keep
COR-078	pending	Cached Concepts	Provisional filed: 3-Nov-2013; Filed: 3-Nov-2014; Published: 19-Feb-2015	2700	3A	Keep
COR-074	pending	A Method for Deep Content Identification of Food Substances	Provisional filed: 13-Oct-2013; Application filed: 4-Dec-2013; Publised: 3-Apr-2014	2700	4B	Keep
COR-146	Provisional	A SYSTEM AND METHOD FOR SEARCHING ENTITIES THROUGH INFORMATION SOURCES USING MULTIMEDIA ELEMENTS	Provisional filed: 23-May-2016	4750	5A	Keep
COR-159	Provisional	A Concepts' Exhaustion System	Provisional filed: 2-Oct-2016	4750	5A	Keep
COR-160	Provisional	A System and Methods Thereof For Generation of Context Respective of Concepts	Provisional filed: 2-Oct-2016	4750	5A	Keep

COR-182	Provisional	A System and Methods for Automatic Clustering of Multimedia Content Elements Identified Through Sources of Multimedia Content	Provisional filed: 6-Jul-2016	4750 5A	Keep
COR-021	Provisional	A Social Linking System and Methods thereof	Provisional filed: 14-Nov-2016	4750 4A	Keep
COR-156	Provisional	A System and Methods Thereof For Enriching Concepts Database	Provisional filed: 6-Sep-2016	4750 5B	Keep
COR-157	Provisional	A System and Methods Thereof For Self-Aware Concept Validation	Provisional filed: 7-Sep-2016	4750 5B	Keep
COR-194	Provisional	A System and Method for Caching of Concept Structures In Autonomous Vehicles	Provisional filed: 16-Aug-2016	4750 5B	Keep
COR-205	Provisional	Match Car with Customer location by mobile camera	Provisional filed: 1-Dec-2016	4750 3A	Keep
COR-151	Provisional	AN ALERT SYSTEM FOR AUTONOMOUS VEHICLES	Provisional filed: 19-Jun-2016	4750 3A	Keep
COR-152	Provisional	A SYSTEM AND METHOD FOR PROVIDING CONTEXTUAL INSIGHTS RESPECTIVE OF USER INTENT	Provisional filed: 26-May-2016	4750 3A	Keep
COR-169	Provisional	A SYSTEM AND METHOD FOR DIAGNOSING A PATIENT BASED ON ANALYSIS OF COMPUTERIZED TOMOGRAPHY IMAGES	Provisional filed: 8-Jun-2016	4750 3A	Keep
COR-137	Provisional	A SYSTEM AND METHOD FOR IDENTIFYING ENVIRONMENTAL VARIABLES ASSOCAITED WITH A USER BASED ON A PLURALITY OF	Provisional filed: 23-May-2016	4750 3A	Keep
COR-148	Provisional	A System amd Methods Thereof for Enhancing a User's Search Experience	Provisional filed: 8-Jun-2016	4750 3A	Keep
COR-158	Provisional	A System and Methods Thereof For Self-Tagging of Concepts	Provisional filed: 11-Sep-2016	4750 3A	Keep
COR-166	Provisional	A SYSTEM AND METHOD FOR CUSTOMIZING SELF-PORTRAIT IMAGES	Filed: 6-Jun-2016	4750 3A	Keep

COR-174	Provisional	A System and Methods for Automated Peer To Peer Sharing of Multimedia Content Elements	Provisional filed: 20-Jun-2016	4750 3A	Keep
COR-177	Provisional	A System and Methods for Generating Content Based Channels of Multimedia Content Elements	Provisional filed: 6-Jul-2016	4750 3A	Keep
COR-179	Provisional	System and Methods for Execution of Applications Respective of Contextual Insights	Provisional filed: 4-Aug-2016	4750 3A	Keep
COR-185	Provisional	A System and Methods for Generating Content Based Channels of Multimedia Content Elements and Providing Recommendations of	Provisional filed: 6-Jul-2016	4750 3A	Keep
COR-192	Provisional	SYSTEM AND METHOD FOR GENERATING AUGMENTED CHALLANGES	Provisional filed: 15-Aug-2016	4750 3A	Keep
COR-198	Provisional	A System and Methods for Automated Generation of Contextually Compatible Clusters of Multimedia Content Elements	Provisional filed: 11-Nov-2016	4750 3A	Keep
COR-068	Provisional	A System and Method for Speech to Text Translation Using Cores of a Natural Liquid Architecture System	Provisional filed: 9-May-2016	4750 4B	Refile
COR-149	Provisional	A System and Methods for Automatically Determining Access Permissions For Clusters of Multimedia Content Elements	Provisional filed: 24-May-2016	4750 4B	Refile
COR-150	Provisional	A COLLISION AVOIDANCE SYSTEM FOR AUTONOMOUS VEHICLES	Provisional filed: 17-Jun-2016	4750 4B	Refile
COR-176	Provisional	Generating a Concept DB accessible by a User ID	Provisional filed: 12-Jul-2016	4750 4B	Refile
COR-178	Provisional	Gathering all data associated with a user from the WWW Responsive to a query Based on Context Analysis	Provisional filed: 16-Jul-2016	4750 4B	Refile
COR-138	Provisional	A System and Method For Identifying Environmental Variables Associated with a User Based on a Plurality of Multimedia Content	Provisional filed: 30-May-2016	4750 2A	Refile
COR-141	Provisional	AN AUTONOMOUS DRIVE SYSTEM AND METHOD FOR GENERATING AUTONOMOUS DRIVING DECISIONS	Provisional filed: 21-May-2016	4750 2A	Refile

COR-147	Provisional	A SYSTEM AND METHODS THEREOF FOR PROVIDING RECOMMENDATIONS ON OF MULTIMEDIA CONTENT ELEMENTS TO	Provisional filed: 25-May-2016	4750 2A	Refile
COR-153	Provisional	An Apparatus for Providing Consumers Analytics	Provisional filed: 27-May-2016	4750 2A	Refile
COR-154	Provisional	A Security Apparatus Based on Multimedia Content Analysis	Provisional filed: 1-Jun-2016	4750 2A	Refile
COR-168	Provisional	A System and Method for Detecting Common Patterns Within Visual Context of Electronic Trading	Provisional filed: 2-Jun-2016	4750 2A	Refile
COR-180	Provisional	A System and Methods for Generating Facial Tags for Multimedia Content Elements	Provisional filed: 23-Aug-2016	4750 2A	Refile
COR-181	Provisional	Dating Service based on Human Concepts	Provisional filed: 6-Jul-2016	4750 2A	Refile
COR-199	Provisional	Advertisement ranking based on Context	Provisional filed: 16-Nov-2016	4750 2A	Refile
COR-200	Provisional	A System and Methods Thereof for Providing Analytics Respective of Social Linking Scores	Provisional filed: 21-Nov-2016	4750 2A	Refile
COR-144	Provisional	A System and Methods for Customizing a Display of a User Device Respective of Multimedia Content Elements	Provisional filed: 23-May-2016	4750 3B	Refile
COR-170	Provisional	A SYSTEM AND METHOD FOR DIAGNOSING A PATIENT BASED ON AN MRI	Provisional filed: 9-Jun-2016	4750 3B	Refile
COR-175	Provisional	A System and Methods Thereof For Displaying Visual Representations of MMCEs on a Display of a User Device	Provisional filed: 21-Jun-2016	4750 3B	Refile
COR-186	Provisional	A System and Methods for Generating Profiles to Users Based on an Analysis of Content Associated with the Users Over the Network	Provisional filed: 4-Nov-2016	4750 3B	Refile
COR-003	issued	A Computing Device, a System and a Method for Parallel Processing of Data Streams	Filed:7-apr-2009; Published: 23-jul-2009; allowed: 20-sep-2013; issued: 18-feb-2014	0 5A	Keep

COR-013	issued	A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content	Filed: 21-oct-09; published: 18-feb-2010; allowed: 11-may-12; issued: 11-sep-2012	0 5A	Keep
COR-025	issued	A Multi-Layer System for Signature-Space Based Compression of Patterns	Provisional filed: 12-Feb-2013; US filed: 30-Apr-2013; Published: 14-August-2014; allowed: 25-aug-14;	0 5A	Keep
COR-030	issued	An Assembler and Method Thereof for Generating a Complex Signatuyre of an Input Multimedia Data Element	Filed: 5-nov-2012; Published: 7-Mar-13; Allowed: 2-jul-2014; Issued: 4-nov-2014	0 5A	Keep
COR-032	allowed	A System and Methods for Generation of Concept Based on a Context	Provisional filed: 27-Jun-2013; Application filed: 4-Dec-2013; Published: 3-Apr-2014; allowed: 30-	0 5A	Keep
COR-073	Issued	A System and Methods for Contextual Identification of Actions	Provisional filed: 11-Oct-2013; Filed: 8-Oct-2014; Published: 22-Jan-2015; Issued: 19-Jul-2016	0 5A	Keep
COR-008	issued	A Method and System for Unsupervised Classification of Large Database Content	Filed: 22-jul-2009; Published: 12-nov-2009; allowed: 29-oct-12; issued: 26-feb-13	0 4A	Keep
COR-028	issued	Signature Based System and Methods for Generation of Personalized Multimedia Channels	Filed: 5-jan-2012; Published: 3-may-2012; allowed: 5-oct-2014; issued: 17-feb-2015	0 4A	Keep
COR-035	Issued	Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof	Filed: 20-nov-2012; Published: 28-mar-13; allowed: 17-nov-14; issued: 24-mar-2015	0 4A	Keep
COR-036	issued	A Computer Software Product for Unsupervised Classification of Large Database Content	Filed: 31-dec-2012; published: 30-May-2013; Allowed: 20-Mar-2014; issued: 5-aug-14	0 4A	Keep
COR-037	issued	A System for Unsupervised Clustering of Multimedia Data Using a Large-Scale Matching Technique	Filed: 31-dec-2012; published: 6-jun-2013; Allowed: 20-Mar-2014; issued: 5-aug-14	0 4A	Keep
COR-053	Issued	A System and Methods for Capturing Multimedia Content Item by a Mobile Device for Subsequently Matching Relevant Content to the	Provisional Filed: 20-Feb-2013; Filed: 29-Jan-2014; Published: 29-Jun-2014; Allowed: 13-Jan-2016;	0 4A	Keep
COR-079	Allowed	A System and Method for Identifying a Target Object In a Multimedia Content Element Based On The Context of The Multimedia Content	Provisional filed: 3-Nov-2013; Filed: 3-Nov-2014; Published: 19-Feb-2015; Allowed: 22-Sep-2016	0 4A	Keep
COR-096	issued	A Computer Software Product for Unsupervised Classification of Large Database Content	Filed: 18-Jul-2014; Published: 6-Nov-2014; Allowed: 6-Apr-2015; Issued: 11-Aug-2015	0 4A	Keep

COR-097	issued	A System for Unsupervised Clustering of Multimedia Data Using a Large-Scale Matching Technique	Filed: 18-Jul-2014; Published: 6-Nov-2014; Allowed: 12-Dec-2014; Issued: 14-Apr-2015	0 4A	Keep
COR-115	issued	A Multi-Layer System for Signature-Space Based Compression of Patterns	Filed: 17-Dec-2014; Published: 16-Apr-2015; allowed: 22-jul-15; issued: 24-nov-15	0 4A	Keep
COR-023	issued	A System and Method for Mapping Real-World Images into Web Domains	Filed: 23-jun-2010; Published: 14-oct-2010; Allowed: 20-Mar-2014; Issued: 26-Aug-2014	0 5B	Keep
COR-027	Issued	A System and Methods Thereof for Dynamically Adding an Overlay to an Image Displayed in a Web Page	Filed: 26-Nov-2012; Published: 28-mar-13; Allowed: 2-Sep-2015; Issued: 12-Jan-2016	0 5B	Keep
COR-029	issued	A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content	Filed: 4-sep-2012; Published: 27-dec-12; Allowed: 23-jun-2014; issued: 21-oct-2014	0 5B	Keep
COR-054	Allowed	A System and Methods for Creating a Database of Multimedia Content Elements Assigned to Users	Provisional Filed: 6-Mar-2013; Filed 5-Mar-2014; Published: 3-Jul-2014; Allowed: 12-Jan-2017	0 5B	Keep
COR-011	issued	Signature Based System and Methods for Generation of Personalized Multimedia Channels	Filed: 1-may-2009; Published: 27-aug-2009; Allowed: 28-sep-2011; issued: 7-feb-12	0 3A	Keep
COR-018	issued	A System and Methods for In Context Translation from One Natural Language to Another Natural Language	Filed: 21-Feb-2013; Published: 27-Jun-2013; Allowed: 17-Mar-2015; Issued: 21-Jul-2015	0 3A	Keep
COR-019	allowed	A System and Method thereof for Brands Monitoring and Trends Analysis based on Deep-Content-Classification	Provisional filed: 15-Mar-2013; Filed: 30-Apr-2013; Published: 12-Sep-2013; Allowed: 14-Aug-2015	0 3A	Keep
COR-033	issued	A System and Methods for Generation of a Concept Based Database	Filed: 13-Feb-2013; Published: 20-Jun-2013; Allowed: 5-Jan-2015	0 3A	Keep
COR-049	Allowed	An Apparatus and Methods Thereof for Verifying Users Identity Based on Multimedia Content Elements	Filed: 1-Oct-2013; Published: 30-Jan-2014; Allowed: 26-Aug-2016	0 3A	Keep
COR-095	pending	A System and Method for Mapping Real-World Images into Web Domains	Application filed: 1-Jul-2014; Published: 30-Oct-2014; Allowed: 3-Apr-2015	0 3A	Keep
COR-117	Allowed	A System and Methods for Generation of a Concept Based Database	Filed: 10-mar-2015; Published: 2-jul-2015; Allowed: 31-Jan-2017	0 3A	Keep

COR-118	issued	Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof	Filed; 11-Feb-2015 Published: 4-Jun-2015; allowed: 4-mar-2016; issued: 5-jul-2016	0 3A	Keep
COR-123	Allowed	A System and Methods thereof for Visual Analysis of an Image on a Web Page and Matching an Advertisement Thereto	Filed: 17-Sep-2015; Allowed: 20-Jan-2017	0 3A	Keep
COR-012	issued	A System and Methods for Generation of Complex Signatures for Multimedia Data Content	Filed: 12-aug-2009; Published: 17-dec-2009; Allowed: 11-Jul-2012; issued: 12-Nov-2012	0 4B	Keep
COR-020	issued	A System and Method thereof for Distributed Search-by-Content and Content-based Advertising	Provisional filed: 7-Mar-2013; Filed: 4-Dec-2013; Publised: 3-Apr-2014; Allowed: 5-Jul-2016; Issued: 8-nov-	0 4B	Keep
COR-116	issued	Signature Based System and Methods for Generation of Personalized Multimedia Channels	Filed: 12-Feb-2015; Published: 4-Jun-2015; Allowed: 21-oct-2015; Issued: 22-mar-2016	0 2A	Keep
COR-026	issued	A System and Methods thereof for Visual Analysis of an Image on a Web Page and Matching an Advertisement Thereto	Filed: 21-Sep-2012; Published: 17-jan-2013; Allowed: 4-Jun-2015; Issued: 17-Nov-2015	0 4B	Keep
COR-034	Issued	System and Method for Generation of Signatures for Multimedia Data Elements	Filed: 5-nov-2012; published: 7-Mar-13; Allowed: 9-jul-2014; Issued: 4-Nov-2014	0 4B	Keep
COR-040	Allowed	A Method for Determining an Area within an Image over Which an Advertisement Can Be Displayed	Provisional filed: 15-mar-2013; Filed: 30-Apr-2013; Published: 19-Sep-2013; Allowed on 9-Nov-2015	0 4B	Keep
COR-045	Issued	A System and Methods Thereof for Receiving Large Volumes of Unstructured Data and Determining Correlations and Association	Provisional Filed: 7-Mar-2013; Filed: 29-Aug-2013; Published: 26-Dec-2013; Issued: 9-Feb-2016	0 4B	Keep
COR-122	Allowed	A Multi-Layer System for Signature-Space Based Compression of Patterns	Filed: 2-nov-2015; Issued: 6-Sep-2016	0 4B	Keep
COR-167	Allowed	A Multi-Layer System for Signature-Space Based Compression of Patterns	Filed: 21-Jun-2016; Allowed: 1-mar-17	0 4B	Keep
COR-143	Allowed	SYSTEM AND METHOD FOR CAPTURING A MULTIMEDIA CONTENT ITEM BY A MOBILE DEVICE AND MATCHING SEQUENTIALLY	Filed: 29-mar-2016; Allowed: 9-Jan-2017	0 2A	Keep
COR-081	Allowed	Pupil Recognition	Provisional filed: 13-Feb-2014; Filed: 11-Jun-2015; Allowed: 28-May-2016; Issued: 11-oct-2016	0 3B	Keep

COR-111	Allowed	A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content	Filed: 8-Oct-2014; Published: 22-Jan-2015; Allowed 13-Oct-2016	0 3B	Keep
COR-113	Issued	An Assembler and Method Thereof for Generating a Complex Signatuyre of an Input Multimedia Data Element	Filed: 3-Nov-2014; Published: 19-Feb-2015; Allowed: 10-may-2016; Issued: 20-Sep-2016	0 3B	Keep
COR-041	Allowed	An Apparatus and Methods for Determination of a User's Attention with Respect of a Plurality of Sensory Inputs	Provisional filed: 15-mar-2013;Filed 29-Aug-2013; Allowed: 23-Feb-2016	0 2B	Keep
COR-133	pending	A System and Methods for Generating Personalized Clusters of Multimedia Content Elements Respective of a User's Profile	Provisional filed: 13-Mar-2016; Filed 7-Mar-2017	0 5A	Keep
COR-048	pending	A System and Methods Thereof for Creating a Database of Users Profile Based on Multimedia content	Provisional: 19-Feb-2013; Filed: 3-Apr-2013; Published: 29-Aug-2013	0 4A	Keep
COR-050	pending	A System and Methods thereof for Visual Analysis of an On-Image Gestures	Provisional Filed: 12-Feb-2013; Filed: 30-Jan-2014	0 4A	Keep
COR-065	pending	A method for Providing Recommendations on Media Content	Provisional filed: 10-Jun-2013; filed: 19-May-2014; Published: 11-Sep-2014	0 4A	Keep
COR-083	pending	A Method for Tracking User Activities Respective of a Recipe and Multimedia Segments Captured by a User Device	Provisional filed: 17-Jan-2014; Filed: 14-Jan-2015; Published: 7-may-2015	0 4A	Keep
COR-084	pending	A Computing Device, a System and a Method for Parallel Processing of Data Streams	Filed: 7-Feb-2014	0 4A	Keep
COR-085	pending	A System amd Methods thereto for Analyzing Multimedia Content elements and Ranking the Multimedia Content Elements Respective of the	Provisional filed: 13-Feb-2014; 11-Jun-2015	0 4A	Keep
COR-088	pending	A System and Methods for Assigning Virtual Content to Natural Content Exists in the Real World	Provisional filed: 27-Jan-2014; Filed: 27-jan-2015	0 4A	Keep
COR-101	pending	Method for Identification of Multimedia Content Elements and Adding Adevertising Content Respective Thereof	Provisional filed: 29-Jul-2014; Filed: 28-Jul-2015	0 4A	Keep
COR-120	Pending	System and Methods for Identification of Interest Points In Multimedia Content Elements	Provisional Filed: 15-Dec-2015; Filed: 27-Oct-2016	0 4A	Keep

COR-121	Pending	System and Methods for Identification of Interest Points In Multimedia Content Elements	Provisional Filed: 13-Mar-2016; Filed: 10-Mar-2017	0 4A	Keep
COR-134	Provisional	A System and Methods for Providing Recommendations on Content Respective of Personalized Clusters	Provisional filed: 13-Mar-2016; Filed 13-Mar-2017	0 4A	Keep
COR-135	Provisional	A System and Methods for Automated Peer To Peer Sharing of Multimedia Content Elements	Provisional filed: 13-Mar-2016; Filed: 1-Feb-2017	0 4A	Keep
COR-140	pending	A SYSTEM AND METHODS THEREOF FOR PROVIDING RECOMMENDATIONS ON TAGS RESPECTIVE OF AN ANALYSIS OF	Provisional filed: 1-Apr-2016; Filed 1-Apr-2017	0 4A	Keep
COR-173	pending	A SYSTEM AND METHOD FOR IDENTIFICATION OF DEVIATIONS FROM PERIODIC BEHAVIOR PATTERNS IN	Filed: 22-Jun-2016	0 4A	Keep
COR-189	pending	A System and Method for Identifying a Target Object In a Multimedia Content Element Based On The Context of The Multimedia Content	Filed: 22-Dec-2016	0 4A	Keep
COR-009	pending	A Method for Using Pictures as Search Objects Using a NLA System	Filed: 21-Feb-2013; Published: 25-Jul-2013	0 5B	Keep
COR-010	pending	Deep Content Recognition of Reduced Data Sets Based on Sparse Representation within Large Scale Databases	Filed: 22-Nov-2013; Published: 20-Mar-2014	0 5B	Keep
COR-056	pending	A System and Methods for Receiving On-image Gestures as Search Queries	Provisional Filed: 11-Mar-2013; Filed 10-Mar-2014; Published: 10-Jul-2014	0 5B	Keep
COR-107	pending	Invisible QR Code	Provisional filed: 28-Aug-2014; Filed: 26-Aug-2015	0 5B	Keep
COR-136	Pending	A SYSTEM AND METHOD FOR IDENTIFYING A PLURALITY OF MULTIMEDIA CONTENT ELEMENTS AS CONTEXTUALY IDENTICAL	Provisional filed: 20-Mar-2016; Filed 18-Oct-2016	0 5B	Keep
COR-052	pending	A System and Method for Speech to Speech Translation Using Cores of a Natural Liquid Architecture System	Provisional Filed: 12-Jun-2013, Filed: 12-Jun-2014; Published: 2-Oct-2014	0 3A	Keep
COR-055	pending	A System and Methods for Generation of Taxonomies Based on Concepts	Provisional Filed: 26-Mar-2013; Filed: 25-Mar-2014; Published: 24-Jul-2014	0 3A	Keep

COR-062	pending	Visual adsense	Provisional filed: 2-May-2013; Filed: 2-May-2014; Published: 11-Sep-2014	0 3A	Keep
COR-086	pending	A System for Constantly Adapting Multimedia Content Exist in Web Sources Respective of Users	Provisional filed: 17-Jan-2014; Filed 15-jan-2015; Published: 7-may-2015	0 3A	Keep
COR-093	pending	A Method for Identification of Clothing Articles	Provisional filed: 28-Aug-2014; Filed: 26-Aug-2015	0 3A	Keep
COR-098	pending	A Method and System for Providing Multimedia Content to Users Based on Textual Phrases	Provisional filed: 29-Jul-2014; Filed: 28-Jul-2015	0 3A	Keep
COR-130	Provisional	System and Methods Thereof For Generating a Life Model Of a User	Prov. Filed: 8-Feb-2016	0 3A	Keep
COR-132	Pending	AN APPARATUS AND METHOD FOR DETERMINING USER ATTENTION USING A DEEP-CONTENT-CLASSIFICATION (DCC)	Filed: 23-May-2016	0 3A	Keep
COR-139	pending	A SYSTEM AND METHOD FOR IDENTIFYING TRENDS BASED ON DEEP-CONTENT-CLASSIFICATION	Provisional filed: 20-Mar-2016; Filed 20-Mar-2017	0 3A	Keep
COR-207	pending	Systems and Methods for Generation of Searchable Structures Respective of Multimedia Data Content	Filed: 26-jan-17	0 3A	Keep
COR-172	Identified	A VISUAL ANALYSIS VEHICLE COMPUTING SYSTEM		0 3A	Leave
COR-191	Pending	SYSTEM AND METHOD FOR GENERATING A CUSTOMIZED AUGMENTED REALITY ENVIRONMENT TO A USER	Filed: 31-Aug-2016	0 3A	Keep
COR-193	Pending	SYSTEM AND METHOD FOR PROVIDING AUGMENTED REALITY CHALLENGES	Provisional filed: 8-Aug-2016; PCT filed: 30-Sep-2016	0 3A	Keep
COR-067	pending	A System and Methods for Identifying Clinical Indicators	Provisiona filed: 27-Jun-2013; filed: 25-Jun-2014; Published: 16-Oct-2014	0 4B	Keep
COR-080	pending	A System and Methods thereto for Analyzing Multimedia Content elements and Ranking the Multimedia Content Elements Respective of the	Provisional filed: 3-Nov-2013; Filed: 3-Nov-2014; Published: 19-Feb-2015	0 4B	Keep

COR-127	Pending	A Method for Determining an Area within an Image over Which an Advertisement Can Be Displayed	Filed: 9-Feb-2016	0 4B	Keep
COR-171	Identified	Generating 3D Virtual Models for AR devices		0 4B	Leave
COR-190	Identified	A System and Method thereof for Distributed Search-by-Content and Content-based Advertising		0 4B	Leave
COR-066	pending	Identifying Image Scale	Provisional filed: 29-Jul-2014; Filed: 29-Jan-2015; Published: 21-May-2015	0 2A	Keep
COR-091	pending	A System for Allocation of Context Based Sets of Concepts	Provisional filed: 30-Apr-2014; Filed: 30-apr-2015;	0 2A	Keep
COR-092	pending	A SYSTEM AND METHOD FOR SPEECH TO SPEECH TRANSLATION USING CORES OF A NATURAL LIQUID ARCHITECTURE SYSTEM	Filed: 10-Oct-2016	0 2A	Keep
COR-102	pending	A System and Method for Identifying Social Trends	Provisional filed: 29-Jul-2014; Filed: 29-Jan-2015	0 2A	Keep
COR-124	pending	A System and Method thereof for Brands Monitoring and Trends Analysis based on Deep-Content-Classification	Filed: 1-Dec-2015	0 2A	Keep
COR-125	pending	A System and Methods Thereof for Dynamically Adding an Overlay to an Image Displayed in a Web Page	Filed: 8-Dec-2015	0 2A	Keep
COR-128	pending	A Method for Determining a Contextual Insight and Providing Recommendations Respective Thereof	Prov. Filed: 3-Jan-2016; Filed: 11-Jul-2016	0 2A	Keep
COR-129	pending	A System and Methods Thereof For Generating a Facial Representation Of a	Prov. Filed: 30-Jan-2016; Filed: 11-Jul-2016	0 2A	Keep
COR-131	pending	System And Methods For Providing Recommendations Respective of User Interests	Prov. Filed: 8-Feb-2016; Filed: 11-Jul-2016	0 2A	Keep
COR-142	pending	Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof	Filed: 28-Apr-2016	0 2A	Keep

COR-196	pending	A SYSTEM AND METHOD FOR IDENTIFYING TRENDS BASED ON DEEP-CONTENT-CLASSIFICATION	Filed: 3-Aug-2016	0 2A	Keep
COR-005	pending	A Method for Generating Cores of a Natural Liquid Architecture (NLA) System for Audio Applications	Provisional filed: 12-Jun-2013, Filed: 12-June-2014; Published: 2-Oct-2014	0 3B	Keep
COR-006	pending	A Method for Generating Cores of a Natural Liquid Architecture (NLA) System for Video Applications	Provisional filed: 12-Jun-2013, Filed: 12-June-2014	0 3B	Keep
COR-007	pending	A Method and System for Deep Content Classification	Filed: 5-jan-2009; Published: 30-apr-2009	0 3B	Keep
COR-082	pending	A System and Methods Thereof for Visual Analysis of Multimedia Content Elements and Matching Content to The Multimedia Content	Provisional filed: 17-Jan-2014; Filed: 14-Jan-2015; Published: 7-may-2015	0 3B	Keep
COR-089	pending	Identifying Global orientation of Elements in Multimedia Content	Provisional filed: 29-Jul-2014; Filed: 4-mar-2015	0 3B	Keep
COR-094	pending	A Method for Recognition of Characters in Multimedia Content	Provisional filed: 5-Mar-2014; Filed: 4-mar-2015;	0 3B	Keep
COR-099	pending	A Method and System for Providing Multimedia Content to Users Respective of Products or Services	Provisional filed: 29-Jul-2014; Filed: 28-Jul-2015	0 3B	Keep
COR-100	pending	A System and Methods for Automatic Clustering of Multimedia Content Elements Identified Through Sources of Multimedia Content	Provisional filed: 29-Jul-2014; Filed: 28-Jul-2015	0 3B	Keep
COR-112	pending	A System and Method for Determining Current Preferences of a User of a User Device	Provisional filed: 29-Jul-2014; Filed: 28-Jul-2015	0 3B	Keep
COR-114	pending	System and Method for Generation of Signatures for Multimedia Data Elements	Filed: 14-Oct-2014	0 3B	Keep
COR-126	pending	A System and Methods Thereof for Receiving Large Volumes of Unstructured Data and Determining Correlations and Association	Filed: 13-Jan-2016	0 3B	Keep
COR-069	pending	A System and Methods for Automatic Removal of Blacklisted Concept	Provisional filed: 27-Jun-2013; filed: 25-Jun-2014; Published: 16-Oct-2014	0 3B	Keep

COR-070	pending	A System and Methods for Enhancing Users Navigation Experience Through Sources of Multimedia Content	Provisional filed: 31-Jul-2013; Filed: 10-Oct-2013; Published: 6-Feb-2014	0	3B	Keep
COR-014	Identified	A System and Methods for Matching Content to Conceptrons			4B	Leave
COR-022	Identified	A Method for Generation of Cores for a Computing Device and a System Thereof for Parallel Processing of Data Streams			4B	Leave
COR-071	Identified	A System and Methods for Compression of Unordered Sets			3A	Leave
COR-087	Identified	A Method for identification of The Energy Center of Multimedia Elements			3A	Leave
COR-015	Identified	A System and Method thereof for Content Filtering and Content Rating			2A	Leave
COR-072	Identified	A Method for Identificaiton of Multimedia Content Elements Using Probabilistic Models			2A	Leave
COR-017	Identified	An Unsupervised Learning System and Methods Thereof			3B	Leave
COR-024	Identified	A System and Method for Providing an Advertisement on a Web Page Responsive of an Image on that Web Page			3B	Leave
COR-038	Identified	An Apparatus and Methods for Concept Distribution			3B	Leave
COR-043	Identified	An Apparatus and Methods for Complementary Actions Based on Concept Recognition of Audio/Video Inputs			3B	Leave
COR-044	Identified	A Method for Context Extraction from an Audio/Video Signal Based on a Taxonomy of Concepts			3B	Leave
COR-047	Identified	Cortica Synapse (Coupling Node) apparatus in Cortex layer			3B	Leave

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3B	Leave
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3B	Leave
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COR-057	Identified	On-line Cortex Generation
COR-059	Identified	Evolving Concept
COR-060	Identified	Spiral Cortex
COR-061	Identified	Context identification by using multiple Cortices
COR-064	Identified	A System and Methods Thereof for Module Based Identification of Multimedia Elements
COR-016	Identified	A System and Methods Thereof for Reducing Storage Space of Multimedia Content
COR-090	Identified	Big-data-based compression
COR-103	Identified	Text in the Wild
COR-104	Identified	Text in the Wild
COR-105	Identified	Text in the Wild
COR-106	Identified	Cortex routing
COR-108	Identified	Picture obphuscation
COR-109	Identified	Temporal Cortex

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COR-110 Identified Feature selection by Cortex

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Filed: 26-oct-2005	0	
Filed: 29-oct-2006	0	
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COR-001	aband.	Natural Liquid Architecture (NLA) Technology
COR-002	aband.	Fast String-Matching by Natural Liquid Architecture (NLA)
COR-119	Identified	A System and Methods for In Context Translation from One Natural Language to Another Natural Language
COR-155	Identified	Cortex Engine
COR-161	Identified	Cortex Engine
COR-162	Identified	Cortex Engine
COR-163	Identified	Cortex Engine
COR-164	Identified	Cortex Engine
COR-165	Identified	Cortex Engine
COR-183	Identified	Real-time Demo of System capabilities upon download of the app

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0	Leave
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0 3B	Leave
0 3B	Leave

COR-187	Identified	Dating Application Based on Image Analysis
COR-188	Identified	A System For Identifying Events Attended by Users
COR-197	Identified	SYSTEM AND METHOD FOR CAPTURING A MULTIMEDIA CONTENT ITEM BY A MOBILE DEVICE AND MATCHING SEQUENTIALLY
COR-201	Identified	Social Linking Based HR Tool
COR-184	Identified	A System for Determination of User Attention Based on Pupil Response Clustering
COR-063	drafting	A System and Methods for Generation of Co-evolutionary cortex

נספח 21

התכתובות מיום 7.6.2017.

Annex 21

Correspondence dated July 7, 2017.

From: Asher Avital
To: or@enitiatives.biz
Cc: igal.raichelgauz@cortica.com
Subject: Re: Patent Expenses - May 2017 - for your authorization
Date: Thursday, June 8, 2017 8:08:38 PM

Or,
It's much higher then what we expected.
Does it change your estimation for the full year?

Asher Avital
CFO
Mobile: +972-50-6975097
Tel Aviv, Israel

On 8 2017 ביוני, at 15:50, <or@enitiatives.biz> <or@enitiatives.biz> wrote:

> Hi Asher,
>
> This is to cover all the work performed in May- 12 national phase filings, responses to office actions in 7 cases and 2 patents allowed. Until the rest of the year there will be a more 25 filings and I expect 5-10 allowances.
>
> Best regards,
> Or
>
> ---
>
> **From:** Asher Avital [mailto:asher.avital@cortica.com]
> **Sent:** Wednesday, June 7, 2017 5:46 PM
> **To:** Adv. Or Agassi
> **Cc:** igal.raichelgauz@cortica.com
> **Subject:** FW: Patent Expenses - May 2017 - for your authorization
>
> Or,
> See attached M&B invoices.
> What is refer to?
>
> **From:** Liron Golan [mailto:liron.golan@cortica.com]
> **Sent:** Wednesday, June 7, 2017 12:41 PM
> **To:** Igal Raichelgauz <igal.raichelgauz@cortica.com>
> **Cc:** Asher Avital <asher.avital@cortica.com>
> **Subject:** Patent Expenses - May 2017 - for your authorization
>
> Hi Igal,

Please approve the below May patent expenses as authorized expenses so that we can properly record them in our books. The invoices are attached for your reference.
They will be paid at a later time.

$77,640 - M&B
$27,027 - eNitiatives

$104,667 - TOTAL - May 2017

Thanks,
Liron

נספח 22

הצעת התקציב מיום 12.7.2017.

Annex 22

Budget proposal dated July 12, 2017.

160

2017

Type		Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	
Milestone Fee		6250	5000	2500	3750	2500	1250	3750	6000	6000	6000	6000	2500	
Legal Work (filing)		10500	6000	6000	9000	6000	3000	9000	1000	1000	1000	1000	6000	
Legal Work (prosecution)		3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
PTO Fees		3130	2150	3600	3000	2000	1000	3000	2000	2000	2000	2000	3600	
Expenses		150	150	1250	0	0	0	0	300	300	300	300	1250	
	Total	23,030	16,300	16,350	18,750	13,500	8,250	18,750	12,300	12,300	12,300	12,300	16,350	180,480

Assumptions:
Conversion of 36 pending applications
Allowance of 1 pending applications each Q

Applications:

COR-192	COR-172	COR-159	COR-186	COR-205	COR-206	COR-210	COR-211
COR-194	COR-156	COR-160	COR-021	COR-202		COR-212	COR-217
COR-180	**COR-216**		COR-199			COR-217	
COR-215							

נספח 23

תכתובות אודות אי ההסכמות בדבר תשלומים בתקופה שבין ינואר-מרץ 2018.

Annex 23

Correspondence on disagreements on payments in the period from January to March, 2018.

From: Or Agassi
To: "Asher Avital"; reuven@enitiatives.biz; "Igal Raichelgauz"; "Karina Odinaev"
Subject: RE: העברה בנקאית לחשבונכם
Date: Sunday, January 28, 2018 2:27:12 PM

Hi Asher,

I am not sure a call is needed but rather a review of the facts. On the price issue the 50% discount was very clear and well documented – I have highlighted below, for your convenience, the offer made by us, sent to both you and Igal, and confirmed by Igal. Even with this we have provided an additional discount by waiving the MS 1.5 due in this case according to our agreement.

It is further clear that over at least the last couple of years Cortica has become delinquent in timely payment of what it owes to us. The terms of payments have been passed many times over again and again. That alone required a lot of time from us to repeatedly address this with the Cortica financial team as well as getting both Igal and Karina involved – a waste of valuable time.

In a meeting we had, in your presence, Reuven and I have clearly stated that the number of patent applications filed by Cortica will and shall result in high costs as we move forward. In fact, the demand from Cortica's side was to go for several hundreds of patent applications per year, which even you thought to be excessive. Eventually, it was agreed to go to the lower number which we are at today, and it was clear that the financial ramifications were well understood.

-

Yours,
Or

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Sunday, January 28, 2018 11:46 AM
To: reuven@enitiatives.biz; Igal Raichelgauz; Karina Odinaev
Cc: Adv. Or Agassi
Subject: RE: העברה בנקאית לחשבונכם

Hi Reuven,
Lets have a call – there is a gap between our understanding.

Asher

From: Reuven Marko [mailto:reuven@enitiatives.biz]
Sent: Friday, January 12, 2018 12:25 PM
To: Igal Raichelgauz <igal.raichelgauz@cortica.com>; Karina Odinaev <karina.odinaev@cortica.com>; asher.avital@cortica.com
Cc: Adv. Or Agassi <or@enitiatives.biz>
Subject: RE: העברה בנקאית לחשבונכם

Dear All,

[English]

Subject: Re: Bank transfer to your account

Hi Reuven,

You must discuss this matter directly with Asher.

Thank you,

Liron

[English]

I was unpleasantly surprised with the e-mail exchange with Liron below. The Excel spreadsheet sent to us did not represent the agreement between the companies. We have never agreed to apply discounts on anything other than, for a limited time period, on MS 2.0 conversions of provisional patent applications which were pending, as evident from the 30/Apr/2017 e-mail exchange between Igal and Or and which was so approved. Applying this discount on other services or other milestone was never agreed to. In fact there was as additional discount there as we have waived MS 1.5 fees for these applications during this period.

Therefore, attached please find a corrected table that depicts the invoices that we have credited you for the payment made. In fact, there is a $50 delta which we decided to waive just so as to close these invoices that the payment for which has been delayed for many months beyond our agreed upon terms of payment. The rest remains due to us as well as additional invoices that have been issued since and do not appear in the spreadsheet.

Best regards and Shabbat Shalom,

Reuven Marko

Israel: Cell 052-325-8840 | Land 09-861-4507 I Fax 09-861-4307 | USA: Cell 914-294-3992

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From: liron.golan@cortica.com [mailto:liron.golan@cortica.com]
Sent: Thursday, January 11, 2018 2:26 PM
To: reuven@eNitiatives.biz
Subject: Re: העברה בנקאית לחשבונכם

היי ראובן,

עליך לדבר בנדון ישירות עם אשר.

תודה,
לירון

Sent from my iPhone

On 10 Jan 2018, at 19:41, Reuven Marko <reuven@enitiatives.biz> wrote:

Dear Liron,

I believe you have a major mistake in the spreadsheet you have sent to us. In that spreadsheet you have applied a 50% discount on items that have never been agreed upon to receive that discount which was specifically for MS 2.0 on conversions of patent applications. In fact, that discount is even larger because we also waived the MS 1.5 which is due to us according to the agreement.

The discount was discussed in an e-mail from Or to Asher and Igal on 30/Apr/2017:

Dear Asher and Igal,
As Cortica wishes to monetize its IP portfolio I believe that it is for the company's best interest to maintain all pending applications including the provisional patent applications that were filed in 2016.
I had a discussion with Reuven and if you indeed wish to convert all of these applications we will charge all the conversions at MS 2.5 instead of MS 2.0, i.e, providing 50% discount on our regular rates in order to assist. In addition, I spoke with Michael of M&B IP analysts and they will provide an additional general 10% discount on all work to be made and will cap the charges for the conversion work at $3,500 instead of $4,500, i.e, 22% additional discount on their rates.
I will need to have your feedback ASAP as we have some conversions that are due starting at **2-May-2017**
Best regards,
Or

Invoices thereafter went out based on this upon confirmation from Igal that this was acceptable. The deductions unilaterally made on at least invoices 7571, 7591, 7634, 7644, 7651, 7703, 7710, and 7718 are wrong. I will get back to you with regards to those invoices to which the payment received covers and the rest shall remain promptly due. This is especially concerning considering the unacceptable delay in payment which is in contrast to our agreed upon payment terms.

Regards,

Reuven Marko

Israel: Cell 052-325-8840 | Land 09-861-4507 I Fax 09-861-4307 | USA: Cell 914-294-3992

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From: Liron Golan [mailto:liron.golan@cortica.com]
Sent: Tuesday, January 09, 2018 3:56 PM

To: reuven@enitiatives.biz
Cc: Or Agassi
Subject: Re: העברה בנקאית לחשבונכם

מצ"ב קובץ מפורט, על פי הרישומים שלי שילמנו הכל עד סוף אוקטובר.

אנא שלחו חשבונית מס בגין התשלום הנ"ל.

On Tue, Jan 9, 2018 at 3:36 PM, Reuven Marko <reuven@enitiatives.biz> wrote:

תודה על ההודעה. אודה אם תוכלי לשלוח גם את מספר חשבונות העסקה כך שנוכל לזכות בהתאם אחד לאחד.
בברכה,
ראובן

Reuven Marko

n
w eNitiatives
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s

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From: Liron Golan [mailto:liron.golan@cortica.com]
Sent: Tuesday, January 09, 2018 3:31 PM
To: Or Agassi; reuven@enitiatives.biz
Subject: העברה בנקאית לחשבונכם

היי אור,
היום הועבר לחשבונכם תשלום בגין חשבוניות עסקה לחודשים מרץ-אוקטובר 2017, ע"ס $78,343.
אנא עדכן אותי אם אתה צריך את מספרי החשבוניות.
תודה,
לירון

[English]

Subject: Re: Bank transfer to your account

Attached hereto is the detailed file, according to my records we paid everything up to the end of October.

Please send a tax invoice for the attached payment.

[English]

Thank you for notifying. I will appreciate it if you can also send the transaction accounts' numbers so that we can credit accordingly one-to-one.

Sincerely,

Reuven

[English]

Subject: Bank transfer to your account

Hi Or,

Today a payment was transferred to your account for the transaction invoices for March-October 2017, at the amount of USD 78,343.

Please update me if you need the invoice numbers.

Thank you,

Liron

From: Reuven Marko
To: "Karina Odinaev"
Cc: "Adv. Or Agassi"; "Igal Raichelgauz"; "Asher Avital"
Subject: RE: M&B invoices
Date: Sunday, March 11, 2018 10:26:06 PM
Attachments: image002.png
image003.png

I guess surprises never cease… This e-mail is from April 2017 – 11 months ago! We stopped, resolved by providing a 50% discount on milestone 2.0 on conversions from 2016 and got the go ahead from you which continued throughout 2017. I believe this e-mail from Asher is irrelevant to your current request. In fact the instructions were quite specific to maintain the work on the portfolio which was diligently done.

Reuven Marko

eNitiatives
Where IP matters®

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From: karina.odinaev@gmail.com [mailto:karina.odinaev@gmail.com] **On Behalf Of** Karina Odinaev
Sent: Sunday, March 11, 2018 1:14 PM
To: reuven
Cc: Adv. Or Agassi; Igal Raichelgauz; Asher Avital
Subject: Re: M&B invoices

Hi Reuven,

Regarding point #1, " To stop the activity until we provide our ok to move forward " - you indeed were not CCed on this request. This was communicated directly to Or.

Please see below the copy, this is why was quite surprised to hear that this is the 1st time we ask to stop the activity before the expenses issues are settled.

From: Asher Avital [mailto:asher.avital@cortica.com]
Sent: Tuesday, April 4, 2017 12:45 PM
To: or@enitiatives.biz
Cc: Igal Raichelgauz
Subject: RE: COR-invoices-2017-20170403

Or,
Please hold any activity until we review the plan.
Please send me the expected cost in 2017 – assuming maintenance only – no new patents.

Asher

Thanks, Karina

On Sun, Mar 11, 2018 at 12:20 PM, Karina Odinaev <karina.odinaev@cortica.com> wrote:
Hi,

Regarding the budget - I'm referring to the file you sent. Am I reading it in a wrong way?

2018		
Type	**Jan**	**Feb**
Milestone 1.0 Fee	0	0
Milestone 2.0 Fee	0	0
Milestone 3.0 Fee	0	0
Legal Work (filing)	0	0
Legal Work (prosecution)	8,175	8,175
IDS Costs (legal + fees)		12,000
Filing Fees (all PTOs)	1,410	1,410
PCT	0	0
Maintenance Fees (all PTOs)	1,800	1,300
Expenses	450	450
Total	11,835	23,335

Assuming no MSs achieved by eNitiatives during these months, and no patents moved to the national phase (so 1st 4 rows changed to 0)

What am I missing?

Thanks. Karina

On Sun, Mar 11, 2018 at 11:36 AM, Reuven Marko <reuven@enitiatives.biz> wrote:
Shalom Karina,

Please see below.

Regards,

Reuven Marko

Israel: Cell 052-325-8840 | Land 09-861-4507 I Fax 09-861-4307 | USA: Cell 914-294-3992

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From: karina.odinaev@gmail.com [mailto:karina.odinaev@gmail.com] **On Behalf Of** Karina Odinaev
Sent: Friday, March 09, 2018 8:44 AM
To: reuven; Adv. Or Agassi
Cc: Igal Raichelgauz; asher.avital@cortica.com
Subject: M&B invoices

Hi Reuven,

I was very surprised to discover yesterday the M&B invoices for February and January ($37k and $26k respectively). RM: Am equally surprised, if not more, to receive this email from you.

This is after we asked:

1.To stop the activity until we provide our ok to move forward RM: That instruction was given on 6/Mar so not applicable to anything that happened and approved before that. At all times everything happens based on your instructions as well as the responsibilities by law that apply to M&B IP on IDSs as explained numerous times. However, as a result of this e-mail from you I am going to send out an e-mail to M&B IP to cease all work and not to do anything without your, Karina, specific written instructions directly to M&B IP. We shall not be responsible to any failure resulting from breakdown in the communication due to this decision by you.

1. To be hands on with the expenses and approve the services we receive **before** the service is provided and are being charged for it. I have never approved these expenses, and I was not even asked before the service was provided. RM: Respectfully this statement of yours does not reflect the facts. Work charged for in January and February began before that, as may be reasonable expected, and based on your then instructions. As for the 'hands on' – I have personally discussed that with both you and Igal in the context of the budget plan – as you well know that has been in your hands now for over three months with no decision, despite several attempts on our side to find out about your decision so that the plan can be put into full force and effect. As recently as 6/Mar you have sent an e-mail stating, among others: "We are

still assessing our plan for 2018" a clear indication that the plan is not yet in place. Only once we get the approval on the budget can we start doing any kind of tracking as only then we'll know what we are working against.

2. This is again way off the proposed budget. RM: That is simply untrue – please check the proposed budget again. If you are comparing it against another budget that you are contemplating we have no exposure to it. In January and February expectation was for some $88K (M&B IP + eNitiatives).

We can not keep working in such way where we keep getting invoices in an uncontrolled way, without any prior approval, and regardless of any budget. These invoices need to be handled. RM: Karina, respectfully, how can you say this?! As noted above you wrote on 6/Mar "We are still assessing our plan for 2018". I would also suggest to be very careful in making a statement like "without any prior approval" as this is not supported by fact. All we have done was under Cortica's instructions and for its benefit.

In addition, could you please provide me with a list of all pending items and their deadline and I will let you know how we want to handle each of them. RM: With pleasure – is it OK if we have such a list in a shared file so that you can OK items as you may see fit? It may help streamline the process. Please let me know.

I would like to emphasize again that only pre-approved expenses should be submitted to Cortica as invoices. RM: As said, effective 6/Mar this is in place – I will issue immediately an e-mail clarifying this. Do note, however, that milestone charges such as MS 3.0 do not require preapproval as they are a contractual obligation of Cortica upon allowance of patent applications. Again, be aware, that with this instruction in place, any and all responsibility for failure to perform any action due to lack of timely response by Cortica shall be your sole responsibility.

Regards, Karina

From:	Reuven Marko
To:	"Karina Odinaev"
Cc:	"Michael Ben-Shimon	M&B IP Analysts"; "Wendy Perrault"; "Adv. Or Agassi"; "Adv. Tal Rosenthal"; "Patent Attroeny Ophir Marko"; "Igal Raichelgauz"; asher.avital@cortica.com
Subject:	RE: Clarification of Work on Cortica Cases
Date:	Sunday, March 11, 2018 12:06:38 PM

Of course, I will ask Wendy at M&B IP to send this to you.

Best regards,

Reuven Marko

Israel: Cell 052-325-8840 | Land 09-861-4507 I Fax 09-861-4307 | USA: Cell 914-294-3992

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From: karina.odinaev@gmail.com [mailto:karina.odinaev@gmail.com] **On Behalf Of** Karina Odinaev
Sent: Sunday, March 11, 2018 11:59 AM
To: reuven
Cc: Michael Ben-Shimon | M&B IP Analysts; Wendy Perrault; Adv. Or Agassi; Adv. Tal Rosenthal; Patent Attroeny Ophir Marko; Igal Raichelgauz; asher.avital@cortica.com
Subject: Re: Clarification of Work on Cortica Cases

Hi Reuven,

Thank you for the clarification.

Please kindly send me a list of all open items and their DD.

Regards, Karina

On Mar 11, 2018 11:50, "Reuven Marko" <reuven@enitiatives.biz> wrote:
Dear All,

Per instructions received from Cortica, and to make sure these are clearly communicated amongst all of us, the following applies effective immediately:

1. No work on Cortica patents or patent applications is allowed without personal approval in writing from Karina. For avoidance of doubt, M&B IP shall receive confirmation on work to be done by M&B IP directly from Karina.

2. This 'no work' applies to filing of provisional patent applications, non-provisional patent

applications, office actions, preparations and filing of IDSs, and payment of maintenance and/or issuance fees. Notifications will be sent to Karina so that she can allow or disallow commencement of such activity.

3. I have explained to Karina in an e-mail that all responsibility for not responding timely to a request to approve any work shall be the sole responsibility of Cortica.

Please strictly adhere to these instructions until notified otherwise.

Sincerely Yours,

Reuven Marko

Israel: Cell 052-325-8840 | Land 09-861-4507 I Fax 09-861-4307 | USA: Cell 914-294-3992

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נספח 24

דו״חות לדוגמה מהשנים 2015, 2016.

Annex 24

Reports for example from 2015, 2016.

Heskia-Hacmun
Law Firm

6 September 2015

Ms. Karina Odinaev, Mr. Igal Raichelgauz, Prof. J. Zeevi
Cortica Ltd.
12 David Khakhmi Street
Tel Aviv

Re: Updated Intellectual Property Audit

Dear All,

We are pleased to provide you with this IP Audit Report based on our recent discussions and the checks we have done since. Based on this information we have prepared an updated list of inventions that we believe to be worthy of patent protection. This list is discussed in detail below. The list further includes also all inventions previously discussed as well as the status of each such invention. Like always, we do remind you that this document does not constitute a legal opinion.

HIGHLIGHTS

1. We have identified multiple new inventions that potentially are suitable for patent protection. We recommend considering filing three of these inventions at least as provisional patent applications.

2. We recommend that this document be updated with any new inventions as they are identified by your team. Thereafter the work plan can be updated and decisions made regarding future patent applications.

3. It is essential to make sure that inventions are filed prior to an offer for sale or public disclosure. Not doing so may adversely affect the ability to protect IP rights. Changes upcoming in the USA patent law may further require consideration as they become law.

4. To date Cortica has 18 issued patents.

5. We do want to draw your attention to the fact that the USA has moved away from the first-to-invent doctrine to the first-inventor-to-file doctrine on March 16, 2013 which has considerable impact on the way priority dates are determined. Furthermore, it is

essential to make sure that inventions are filed prior to an offer for sale or public disclosure. Not doing so may adversely affect the ability to protect IP rights.

THE INVENTIONS

As noted above, based on our discussions, interviews and document provided, we have come up with a proposed list of inventions that we believe should be considered for patent applications by the company. We have conducted an initial basic prior art search on the proposed inventions, based on the USPTO database. The "IP standing" provides our initial view of how likely the invention is to stand against the prior art that we have encountered. The "IP standing index" goes from "1" (poor rating: 40+ potentially relevant prior art patents) to "5" (good rating: less than 10). The index may go up or down based on further evaluation of the prior art. A "Business Value Ranking", based on our business judgment, is also provided, where "A" is the most important, "B" in the mid range, and "C" being of the least value. Patents that were filed as non-provisional applications are indicated in the following table in green.

Invention	**Description**	**IP Standing**	**Value Ranking**
COR-001 *abandoned*	"Natural Liquid Architecture (NLA) Technology" –architecture and embodiments thereof of asynchronous, adaptively-reconfigurable and fault tolerant processors implemented in "Natural Liquid Architecture" (NLA) technology. The NLA consists of a large ensemble (of the order of thousands or more) of asynchronous units, executing in parallel subsets of instructions of a complex task, or of multiple tasks in varying environments. NLA cores are enabled to decompose a complex computational task, into many subsets of simpler (complexity-wise) computational tasks, through all stages of processing flow. The NLA processors are modularly designed, and their implementation is based on hybrid analog and digital VLSI state-of-the-art techniques. *Filed in Israel as patent application 171577, October 26, 2005. Decision not to continue with the patent due to low value to Israel market.*	5	A
COR-002 *abandoned*	"Fast String-Matching by Natural Liquid Architecture (NLA)" – a method and its technological embodiments for processing and matching a stream of data such as encountered in string matching and regular expressions	5	A

	identification. The approach is based on implementation of Natural Liquid Architecture (NLA) technology. The streaming data is fed into all the cores in parallel, driving the cores to produce a certain signatures in response to the injected bit-stream. The final output of the processor is based on the integrated responses of the SP-NLA cores. The SP-NLA processor is programmed for detection of a certain class of strings and regular expressions. Subsequent to the programming phase, SP-NLA turns into a memory-less filter which inspects the streaming data. *Filed in Israel as patent application 173409, January 29, 2006. Decision not to continue with the patent due to low value to Israel market.*		
COR-003 *issued*	"A Computing Device, a System and a Method for Parallel Processing of Data Streams" – a computing arrangement for identification of a current temporal input against one or more learned signals. The arrangement comprising a number of computational cores, each core comprises properties having at least some statistical independency from other of the computational, the properties being set independently of each other core, each core being able to independently produce an output indicating recognition of a previously learned signal, and at least one decision unit for receiving the produced outputs from the number of computational cores and making an identification of the current temporal input based the produced outputs. *Filed as PCT/IL2006/001235, October 26, 2006, and converted to a US 12/084,150 and EP application 06809796.3 in April 2008. Priority claimed from COR-001 and COR-002. Allowed as US patent 8,655,801 on September 20, 2013, and issued as EP patent 1949311 on August 8, 2013*	5	A
COR-004 *issued*	"Large-Scale Matching System and Method for Multimedia Deep-Content-Classification" – a realization of the NLA architecture embedded in large-scale matching system for multimedia deep content classification. The system receives	4	A

	an input stream, e.g., multimedia content segments, injected in parallel to all computational cores of the LNA. The cores generate a compact signature for the specific content segment, and/or for a certain class of equivalence and interest of content-segments. For large-scale volumes of data, the signatures are stored in a database of size N, allowing match between the robust signature of certain content-segment and the database, in low-cost, in terms of complexity, i.e. <=O(logN), and response time. *Filed in Israel August 21, 2007 185414. Calling for priority claimed from COR-001, COR-002 and COR-003. Filed as US patent application 12/195,863, and PCT/US2008//073852. US patent application Published on 30-apr-2009; allowed: August 6, 2013; and issued: December 4, 2012. US patent No. 8,326,775. UK patent GB2463836.*		
COR-005 *pending*	"A Method for Generating Cores of a Natural Liquid Architecture (NLA) System for Audio Applications" – in order to achieve optimal results when the input signal to the system is known to be an audio signal, the cores comprising the LNA system should be programmed in a specific way. The method teaches such a way that maintains a high degree of independency between the cores. It further enables the matching of many-to-one, e.g, a match can be found even if the audio arrives from different recording sources. *Filed as provisional patent application 61/833,931 on June 12, 2013; Merged with COR-006*	3	B
COR-006 *pending*	"A Method for Generating Cores of a Natural Liquid Architecture (NLA) System for Video Applications" – in order to achieve optimal results when the input signal to the system is known to be a video signal, the cores comprising the LNA system should be programmed in a specific way. The method teaches such a way that maintains a high degree of independency between the cores. It further enables the matching of many-to-one, e.g, a match can be found even if the subject for matching is presented in one case in a different	3	B

	angle than in another case. *Filed as provisional patent application 61/833,932 on June 12, 2013; converted to US patent application 14/302,487 on June 12, 2014.*		
COR-007 *pending*	"A Method and System for Deep Content Classification" - A method for associate metadata to a multimedia content based on finding matches to similar multimedia content. A given input multimedia content is matched to at least another multimedia content with corresponding metadata. Upon determination of a match, the corresponding metadata is used as metadata of the given multimedia content. When a large number of multimedia data is compared a ranked list of metadata is provided. The most appropriate metadata is associated to the given multimedia content based on various criteria. The method can be implemented in any applications which involve large-scale content-based clustering, recognition and classification of multimedia data, such as, content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, object recognition, video search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. *CIP of COR-003 and COR-004. Filed as US patent application 12/348,888; Published on April 30, 2009.*	3	B
COR-008 *issued*	"A Method and System for Unsupervised Classification of Large Database Content" – A method and apparatus for clustering a plurality of data elements. The method comprises receiving a plurality of cluster elements, each cluster element containing at least a data element; generating a clustering score for each cluster element of the plurality of cluster elements versus all other cluster elements of the plurality of cluster elements using a computing device; determining a size of a diagonal matrix having a size corresponding to the number of the plurality of cluster elements; placing the clustering score in a diagonal matrix in storage	4	A

	one clustering score for each pair of cluster elements; creating a new cluster element for each two cluster elements in the diagonal matrix having a clustering score that exceeds a threshold; and storing generated new cluster elements in the storage. *CIP of COR-003 and COR-004. Filed as US patent application 12/507,489; Published on November 12, 2009; allowed: October 29, 2012. Issued as US patent 8,386,400 on February 26, 2013.*		
COR-009 *pending*	"A Method for Using Pictures as Search Objects Using a NLA System" – A system enables searching for information over the web by using multimedia content as an input search query. The system generates one or more signatures for the search query and finds content that may be linked to the input search object respective thereof. According to one embodiment, if an image of a certain brand of car is received as an input, links on the web are shown for that brand of car, or images of other cars in the respective class of cars. *Filed as US patent application 13/773,112 on February 21, 2013; Published on July 25, 2013.*	5	B
COR-010 *pending*	"Deep Content Recognition of Reduced Data Sets Based on Sparse Representation within Large Scale Databases" – A method is used to match inputs against available content even if sparse information is available. For example, in the case where audio is to be matched, the medium used for recording may impact the recognition of the content or the speaker. However, the method enables matching through information of other audio clips that may use the same medium by other speakers to understand and resolve the matching. *Filed as US patent application 14/087,800 on November 22, 2013.*	5	B
COR-011 *issued*	"Signature Based System and Methods for Generation of Personalized Multimedia Channels" – A system for generating personalized channels of multimedia content. The system comprises an interface to one or more multimedia sources, wherein the multimedia sources provide multimedia content	3	A

	to the personalized channels of multimedia content; and a server for receiving multimedia content from the one or more multimedia sources through the interface and for serving selected multimedia content to users of the system over one or more of the personalized channels; wherein a user of the system receives personalized multimedia content gathered by the server into the one or more of the personalized channels responsive of preferences of the user as observed by the system for the user. *CIP of COR-003 and COR-004. Filed as US patent application 12/434,221; Published on August 27, 2009; Allowed: September 28, 2011; issued: February 7, 2012. US patent 8,112,376.*		
COR-012 *issued*	"A System and Methods for Generation of Complex Signatures for Multimedia Data Content" – A system and method for generating complex signatures for a multimedia data element based on signatures of minimum size multimedia data elements. Accordingly a partitioning unit partitions the multimedia data content to minimum size multimedia data elements. A signature generator generates signatures for each of the minimum size multimedia data elements. An assembler unit assembles a complex signature for a higher level partition multimedia data element by assembling respective complex signatures or signature of minimum size multimedia data elements of an immediately lower partition level. Multimedia data elements include but are not limited to, images, graphics, video streams, video clips, audio streams, audio clips, video frames, photographs, images of signals, combinations thereof, and portions thereof. *CIP of COR-003, COR-004 and COR-007.Filed as US patent application 12/538,495; Published on December 17, 2009; allowed: June 11, 2012; issued November 13, 2012. US patent 8,312,031*	4	B
COR-013 *issued*	"A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content" – A system that is	5	A

	capable of generating signatures for multimedia data content creates multimedia data elements thereof and selects those which are meaningful elements. Signatures respective of the elements are generated and clustered and then reduced to generate a cluster reduction for each generated cluster. A conceptron is then generated by associating the signature reduction with metadata associated with the respective multimedia data elements and the clusters represented by the cluster reduction. *CIP of COR-003, COR-004, COR-007, and COR-012. Filed as US patent application 12/603,123 on October 21, 2009; Published on February 18, 2010; allowed: May 11, 2012; issued: September 11, 2012. US patent 8,266,185*		
COR-014 *identified*	"A System and Methods for Matching Content to Conceptrons" – a continuation-in-part of COR-013 this invention that shows the ability to add a matching process or unit and thereby enable fast matching between multimedia content received for checking and the conceptrons stored in the system. This can be used in specific expert systems as well as general web checking systems.	4	B
COR-015 *identified*	"A System and Method thereof for Content Filtering and Content Rating" – supply of multimedia content requires, at times, filtering the content to avoid transmission of inappropriate content from a source to a target. Such filtering takes place by comparing the signature of the content to similar content previously identified. For example, adult content is identified by the system to create an initial reference source of such content. A new content can be now filtered through the system by determining the new content signature and comparing against the signature database of the system. Upon determination of a match and/or similarity the content is either not provided or an alert is generated. The system can also be used to rate content. For example, adult content can be rated by comparison to other such content already rated by the system.	3	A
COR-016	"A System and Methods Thereof for Reducing	4	A

identified	Storage Space of Multimedia Content" – multimedia content requires significant amounts of storage. Much of the content is repetitive by nature, loaded to distribution systems from various sources. At times smaller portions of a larger clip are also stored too. The system detects such duplications through application of the Cortica signature analysis and then replaces the actual content with a pointer to the place where the content actually resides. In addition, if a portion of a clip is to be viewed, then the starting point and the ending point are also provided, or otherwise used to enable viewing of the clip from and to the desired points.		
COR-017 *identified*	"An Unsupervised Learning System and Methods Thereof" – continuation-in-part of COR-013 adding various components to the system and showing how together they enable the creation of an auto-learning system.	5	A
COR-018 *issued*	"A System and Methods for In Context Translation from One Natural Language to Another Natural Language" – A system is configured to receive a word within a sentence as well as the sentence itself and match words and phrases of the sentence to multimedia content. Respective thereto the system is configured to match multimedia content having metadata in one natural language to multimedia data having metadata in another natural language. Based on the matching the system is configured to determine the appropriate translation in-context. *Filed as US patent application 13/773,118 on February 21, 2013; Published on June 27, 2013. Issued as 9,087,049 on 21-Jul-2015.*	3	A
COR-019 *Allowed*	"A System and Method thereof for Brands Monitoring and Trends Analysis based on Deep-Content-Classification" – A system analyzes trends respective of brands' monitoring over the web. A method begins when a server receive a request to monitor a brand. In one embodiment, the server is configured to generate one or more signatures respective of the brand. The sever crawls	3	A

	through one or more web sources to identify multimedia content. Further, the server identifies existence of the brand within the multimedia content. The server analyzes the behavior of the brand within the multimedia content for the purpose of comparing the brand's behavior to previously identified behavior of the brand. The system contains a database that maintains the previously identified behaviors. The server is configured to identify changes in the brand's behavior respective thereof. *Filed as provisional patent application 61/789,576 on March 15, 2013; converted to US patent application 13/874,115 on April 30, 2013; Published on September 12, 2013. Allowed on 14-Aug-2015.*		
COR-020 *pending*	"A System and Method thereof for Distributed Search-by-Content and Content-based Advertising" – A system and methods thereof for determining a concept for advertisement to be displayed on a user node respective of the user characteristics and a content based search. A server extracts at least one multimedia content element from a web-page displayed on the user node. The server generates at least one signature respective of the multimedia content element. Further, the server generates a concept adapted to the user respective of the at least one signature generated and user characteristics. The server is configured to search for advertisement items that are relevant to the user interest respective of the concept. Further, the server may cause the display of the advertisement item within a display area of the web-page. *Filed as provisional patent application No. 61/773,837 on March 7, 2013; converted to US patent application 14/096,802 on December 4, 2013.*	4	B
COR-021 *identified*	"A System and Methods Thereof for Concepts Hierarchy" - TBD	4	A
COR-022 *identified*	"A Method for Generation of Cores for a Computing Device and a System Thereof for Parallel Processing of Data Streams" – a CIP of COR-003 and COR-004 that describes the generation of cores and nodes thereto that are	4	B

	distributed in an N^{th} dimensional sphere in such a way so as to allow effective object recognition.		
COR-023 *issued*	"A System and Method for Mapping Real-World Images into Web Domains" – An image relating to the real world is captured and a signature thereof is associated thereto, for example, the Cortica kind of signatures. The signature of the real world image is compared with clusters of signatures and signatures of clusters that each has a URL associated thereto. Upon detection of a match associating the URL to the newly captured real-world image. The advantage being that in this way there is no need for identification of the actual content of the image, a tedious and non-scalable mission. *Filed as US patent application 12/822,005 on 23-Jun-10; Published on October 14, 2010; issued on August 26, 2014 no. 8,818,916.*	5	B
COR-024 *identified*	"A System and Method for Providing an Advertisement on a Web Page Responsive of an Image on that Web Page" – in many of the social networks images appear frequently, however, there is no metadata associated to these images, or metadata that is meaningful to the inference of the content of the image. Therefore providing an appropriate advertisement is difficult. Accordingly the system generates a signature for the image and deduces from either a process of image-to-text based on signatures, extraction of taxonomies and context to product the appropriate advertisement, or by associating the signatures of the image to the signatures of advertisement and identifying when a match occurs.	5	B
COR-025 *issued*	"A Multi-Layer System for Signature Based Compression of Patterns" -- By using a plurality of layers based on the signature concepts of previous patents of Cortica there is provided an improved representation of input patterns in terms of: compression, robustness, and repeatability. More over the system becomes more generalized and invariant. A cortical layer, according to the invention, is composed of N patterns. The input is matched to all *N*	5	A

	patterns in order to produce a new signature in the form of *n* nearest-neighbor cortical pattern-ids. Cortical layer can be viewed as a sphere with two parameters: *R*max - defines the external-radius of the sphere, and is determined by the probability of random pattern to get a single match; and, *R*min - defines the internal-radius of the sphere, and is determined by the probability of random pattern to get a single match. All *N* pattern-ids are placed in the sphere between Rmin and Rmax. The input pattern approaches the sphere by lowering its threshold for a match. All the cortical patterns are competing and only the *n* nearest pattern win to represent the input pattern. *Filed as provisional patent application 61/763,554 on February 12, 2013; converted to US patent application No. 13/874,159 on April 30, 2013; PCT application PCT/US13/46155 filed on June 17, 2013. US patent 8,922,414 issued on December 30, 2014; JP application filed on November 4, 2014; CN application filed on December 9, 2014; UK application 1417750.5 filed on October 7, 2014.*		
COR-026 *Allowed*	"A System and Methods thereof for Visual Analysis of an Image on a Web Page and Matching an Advertisement Thereto" - A method for matching an advertisement item to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; searching for at least one advertisement item respective of the signature; and causing the display of the at least one advertisement item within a display area of the web-page. *Filed as US patent application 13/624,397 on 21-Sep-12; Published on January 17, 2013. Allowed on 4-Jun-2015.*	3	A
COR-027 *Allowed*	"A System and Methods Thereof for Dynamically Associating a Link to an Information Resource With a Multimedia Content Displayed In a Web-page" – A method for associating at least a link to an information	5	B

	resource with a multimedia content element. The method comprises identifying at least one multimedia content element in a web-page, wherein a uniform resource locator (URL) of the web-page is received from any one of a user device and a web server hosting the web-page; generating a signature for at least a portion of the at least one identified multimedia content element; determining at least a link to the at least a portion of the content respective of the generated signature; and providing the web-page with the at least a link respective of the signature of the at least a portion of the at least one multimedia content element to the user device. *Filed as US patent application 13/685,182 on November 26, 2012; Published on March 28, 2013. Allowed on 2-Sep-2015.*		
COR-028 *issued*	"Signature Based System and Methods for Generation of Personalized Multimedia Channels" - A system for generating personalized channels of multimedia content. The system comprises an interface to one or more multimedia sources, wherein the multimedia sources provide multimedia content to the personalized channels of multimedia content; and a server for receiving multimedia content from the one or more multimedia sources through the interface and for serving selected multimedia content to users of the system over one or more of the personalized channels; wherein a user of the system receives personalized multimedia content gathered by the server into the one or more of the personalized channels responsive of preferences of the user as observed by the system for the user. *Continuation of COR-011. Filed as US patent application No. 13/344,400 on January 5, 2012; Published on May 3, 2012; Allowed on October 5, 2014. Issued as 8,959,037 on 17-Feb-2015.*	2	Λ
COR-029 *issued*	"A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content" – A system that is capable of generating signatures for multimedia data content creates multimedia data elements	3	Λ

	thereof and selects those which are meaningful elements. Signatures respective of the elements are generated and clustered and then reduced to generate a cluster reduction for each generated cluster. A conceptron is then generated by associating the signature reduction with metadata associated with the respective multimedia data elements and the clusters represented by the cluster reduction. *Continuation of COR-013. Filed as US patent application 13/602,858 on 4-Sep-12; Published on December 27, 2013; issued 8,868,619 on October 29, 2014.*		
COR-030 *issued*	"A System and Methods for Generation of Complex Signatures for Multimedia Data Content" – A system and method for generating complex signatures for a multimedia data element based on signatures of minimum size multimedia data elements. Accordingly a partitioning unit partitions the multimedia data content to minimum size multimedia data elements. A signature generator generates signatures for each of the minimum size multimedia data elements. An assembler unit assembles a complex signature for a higher level partition multimedia data element by assembling respective complex signatures or signature of minimum size multimedia data elements of an immediately lower partition level. Multimedia data elements include but are not limited to, images, graphics, video streams, video clips, audio streams, audio clips, video frames, photographs, images of signals, combinations thereof, and portions thereof. *Continuation of COR-012.Filed as US patent application 13/668,559 on November 5, 2012; Published on March 27, 2013; Allowed on July 2, 2014; Issued US patent 8,880,539 on November 4, 2014.*	3	B
COR-031 *pending*	"A System and Methods for Generation of Context Based on a Concept" – A system determines the context of a multimedia content exists in a web-page. The system generates at least a signature for each element of a multimedia content displayed in a web-page. A	4	A

	server analyzes the context of each of the signatures and determines the context of the multimedia content respective thereto. *Filed as US patent application 13/770,603 on February 19, 2013; Published on July 25, 2013.*		
COR-032 *pending*	"A System and Methods for Generation of Concept Based on a Context" – A method and server for analyzing a multimedia content item are provided. The method comprises receiving a multimedia content item; extracting from the multimedia content item a plurality of multimedia elements; generating at least one signature for each of the plurality of multimedia elements; for each of the plurality of multimedia elements, querying a deep-content-classification (DCC) system to identify at least one concept that matches one of the plurality of multimedia elements, wherein querying is performed using the at least one signature generated for the multimedia elements and wherein an unidentified multimedia content element does not have a matching concept; generating a context for the multimedia content item using matching concepts; and characterizing each unidentified multimedia element using the generating context and signatures of the matching concepts. *Filed as Provisional patent application 61/839,883 on June 27, 2013; converted to US patent application 14/096,901 on December 4, 2013.*		
COR-033 *Issued*	"A System and Methods for Generation of a Concept Based Database" – A system for generating concept based database respective of a plurality of multimedia data elements (MMDEs). The system comprises an attention processor (AP) for generating a plurality of items from a received MMDE of the plurality of MMDEs and determining which of the generated items that are of interest for signature generation; a signature generator (SG) for generating at least a signature responsive to at least an item of interest of the received MMDE of the plurality of MMDEs; a clustering processor (CP) for clustering a plurality of	3	A

	signatures received from the signature generator responsive of the plurality of MMDEs, and for creating a signature reduced cluster (SRC) of the cluster; a concept generator (CG) for associating metadata with the SRC and matches the SRC with previously generated SRC such that SRCs that match form a concept structure comprised of a plurality of SRCs and their associated metadata; and, an index generator (IG) for generating a plurality of compressed conceptual representations for each of the plurality of MMDEs stored in database. *Filed as US patent application 13/766,463 on February 13, 2013; Published on June 20, 2013; Allowed as 9,031,999 on January 5, 2015.*		
COR-034 *issued*	"System and Method for Generation of Signatures for Multimedia Data Elements" – A system for generating signatures of an input multimedia data element comprises a partitioning unit for recursively partitioning the input multimedia data element into a plurality of multimedia data elements, wherein each of the plurality of the minimum size multimedia data elements is a minimal partition of the input multimedia data elements; a signature generator for generating for each of the plurality of minimum size multimedia data elements a respective signature; and a storage unit for storing the respective signatures respective of the plurality of minimum size multimedia data elements. *Continuation of COR-012. Filed as US patent application 13/668,557 on November 5, 2012; Published on March 7, 2013; US patent 8,880,539 issued on November 4, 2014.*	4	B
COR-035 *issued*	"Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof" – Content-based clustering, recognition, classification and search of high volumes of multimedia data in real-time. The embodiments disclosed herein are dedicated to real-time fast generation of signatures to high-volume of multimedia content-segments, based on relevant audio and visual signals, and to	4	A

	scalable matching of signatures of high-volume database of content-segments' signatures. The embodiments disclosed herein can be implemented in any applications which involve large-scale content-based clustering, recognition and classification of multimedia data, such as, content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, object recognition, video search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. *Continuation of COR-004. Filed as US patent application 13/682,132 on November 20, 2012; Published on March 28, 2013. Issued as 8,990,125 on 24-Mar-2015.*		
COR-036 *issued*	"A Computer Software Product for Unsupervised Classification of Large Database Content" – An apparatus and method for reducing an amount of storage required for maintaining a large-scale collection of multimedia data elements by unsupervised clustering of multimedia data elements. The method comprises processing the multimedia data elements in the large-scale collection to generate a first cluster of multimedia data elements; storing the first cluster in a storage unit; repeating the generation of a new cluster from the first cluster and un-clustered multimedia elements in the large-scale data collection until a single cluster is reached; and storing a new cluster generated at each iteration in the storage unit, wherein a N-th cluster generated at the N-th iteration is stored in the storage unit, wherein the amount of storage requires to store the N-th cluster is less than an amount of storage of the large-scale data collection, thereby the unsupervised clustering enables reducing the storage amount requires to store the multimedia data elements in the large-scale collection. *Continuation of COR-008. Filed as US patent application 13/731,921 on December 31, 2012; Published on March 30, 2013; US patent 8,799,196 issued on August 5,*	4	A

	2014.		
COR-037 *issued*	"A Method for Unsupervised Clustering of Multimedia Data Using a Large-Scale Matching System" – A method and apparatus for unsupervised clustering of a large-scale collection of multimedia data elements. The method comprises generating a first cluster from the large-scale collection by: matching each multimedia data elements to all other multimedia data elements in the large-scale collection, determining a clustering score for each match being performed, clustering multimedia data elements having a clustering score above a threshold to create the first cluster; and storing the first cluster in a storage. *Continuation of COR-008. Filed as US patent application 13/731,906 on December 31, 2012; Published on June 6, 2013; US patent 8,799,195 issued on August 5, 2014.*	4	A
COR-038 *identified*	"An Apparatus and Methods for Concept Distribution" – *waiting to receive additional information from Igal to address this invention.*		
COR-039 *pending*	"An Apparatus and Methods for Visual Association of Application Icons to Content" – The system analyzed applications, or links to applications installed locally on a user device. The system analyzes the icons representing the applications and generates signatures to the icons. Respective thereto, the system finds similar applications over the web respective of the analysis of the icons and the respective signatures. *Filed as Provisional patent application 61/781,847 on March 14, 2013; converted to a US patent application 14/209,448 on March 13, 2014; published on July 10, 2014.*	3	A
COR-040 *pending*	"A Method for Determining an Area within an Image over Which an Advertisement Can Be Displayed" – A method for determining an area within multimedia content over which an advertisement can be displayed. The method comprises extracting multimedia content from a web-page requested for display on a user node; generating a signature of each of the multimedia content elements of the multimedia	4	B

	content; searching for at least one advertisement item respective of the signature; determining a display area within the multimedia content over which an advertisement can be displayed; and causing the display of the at least one advertisement item within the display area of the multimedia content. *Filed as Provisional patent application 61/789,378 on March 15, 2013; converted to US patent application 13/874,195 on April 30, 2013; Published on September 19, 2013.*		
COR-041 *pending*	"An Apparatus and Methods for Determination of a User's Attention with Respect of a Plurality of Sensory Inputs" – A system for determining a user's attention to a multimedia content displayed over the network. The system comprises one or more sensors that are configured to receive one or more inputs related to the attention of a user. The system is then configured to analyze the multimedia content and the respective one or more inputs and determine the user attention to the multimedia content respective thereto. According to one embodiment, the user attention to multimedia content is stored in a data warehouse and the system is configured to predict the user's attention to similar multimedia content. *Filed as provisional patent application 61/789,460 filed on March 15, 2013; Converted to US patent application 14/013,636 on August 29, 2013; Published on August 29, 2014.*	2	B
COR-042 *pending*	"An Apparatus and Methods for Realtime Bidding Based on Concept Recognition of Audio/Video Inputs" – A method for matching relative content to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; generating characteristics related to the user; determining the concept of the user's impression; searching for relative content respective of the signature;	4	A

	and causing the display of the at least matched content within an appropriate area of the web-page. *Filed as provisional patent application 61/789,510 on March 15, 2013; converted to a US patent application 14/212,213 on March 14, 2013; Published on July 17, 2014*		
COR-043 *identified*	"An Apparatus and Methods for Complementary Actions Based on Concept Recognition of Audio/Video Inputs" – *waiting to receive additional information from Igal to address this invention.*		
COR-044 *identified*	"A Method for Context Extraction from an Audio/Video Signal Based on a Taxonomy of Concepts" – *waiting to receive additional information from Igal to address this invention.*		
COR-045 *pending*	"A System and Methods Thereof for Receiving Large Volumes of Unstructured Data and Determining Correlations and Associations Thereto based on Signature Analysis" - A system analyzed unstructured data available through the web and generates signatures respective thereof. The system then identifies one or more common patterns respective of the signatures and store the patterns in a database for further use. *Filed as provisional patent application 61/773,838 on March 7, 2013; Converted to US patent application 13/013,740 on August 29, 2013; Published December 26, 2013.*	4	B
COR-046 *pending*	"A System and Methods Thereof for Determination of Causality Based on Correlation Between Data Objects within Big Data" – The method comprises an analysis of multimedia content and generation of signatures respective thereof; identifying one or more common patterns respective of the signatures; matching the one or more common patterns to one or more available hypothesizes; and determining the causality of the one or more common patterns. *Filed as provisional patent application 61/763,501 on February 12, 2013; filed as US Patent application 14/171,158 on February 3, 2014; Published on June 5, 2014.*	5	A

COR-047 *drafting*	"Cortica Synapse Apparatus in Cortex layer" – a continuation-in-part of COR-025. An apparatus enables optimal accuracy while using the signature concepts of previous patents of Cortica by constantly setting one or more thresholds.	5	A
COR-048 *pending*	"A System and Methods Thereof for Creating a Database of User Profiles Based on Multimedia Content" – A system continuously monitors the activity of a user over the web. Upon identification of multimedia content viewed by the user, the multimedia content is analyzed and at least one signature is generated respective thereto. The system is then configured to generate the user's profile respective of the generated signatures. The user's profile is then stored in a data warehouse for further use. *Filed as provisional patent application 61/766,016 on February 19, 2013; converted to US patent application 13/856,201 on April 3, 2013.*	4	A
COR-049 *pending*	"An Apparatus and Methods Thereof for Verifying Users Identity Based on Multimedia Content Elements" – A system for verification of user identification while trying to unlock a device. The system is configured to receive multimedia identification parameters related to a user while attempting to unlock the device. The system then generates signatures respective of the multimedia identification parameters. If the user's identification is verified, the system unlocks the device. If the user identification is not verified an alert is generated of an unauthorized attempt to unlock the device. *Filed as US patent application 14/043,230 on October 1, 2013; Published on January 30, 2014.*	3	A
COR-050 *pending*	"A System and Methods Thereof for Visual Analysis of an On-Image Gestures" – a continuation-in-part of COR-027 that shows the ability to identify a plurality of on-image gestures received by a user. An on-image gesture is received by the user and identified by the system. A signature is generated for at least the portion of the image over which the gesture	4	A

	was identified. At least a link to an information resource is associated to the portion of image and provided to the user respective thereto. *Filed as provisional patent application 61/763,505 on February 12, 2013; filed as US Patent application 14/168,811 on January 30, 2014; Published on January 30, 2014.*		
COR-051 *pending*	"Image Based Filters" – A method and system for generating contextual filters for editing multimedia content elements. The method comprises receiving a uniform resource locator (URL) of the web-page; downloading the web-page respective of the received URL; analyzing the web-page to identify the existence of each of the plurality of multimedia content elements; generating at least one signature for each of the plurality of multimedia content elements, wherein each of the generated signatures represents a concept; and generating one or more contextual filters for editing the multimedia content elements shown in the web-page. *Filed as provisional patent application 61/773,349 on March 6, 2013; filed as US patent application 14/198,178 on March 5, 2014; Published on July 3, 2014.*		
COR-052 *pending*	"A System and Methods for In Context Conversion Of an Input Signal In a First Natural Language to Another Natural Language" – continuation-in-part of COR-005 adding various components to the system and showing how together they enable receiving an input in a first natural language and sending a contextually matched input in a second natural language. *Filed as provisional patent application 61/833,933 on June 12, 2013; converted to US patent application 14/302,495 on June 12, 2014; Published on October 2, 2014.*	3	A
COR-053 *pending*	"A System and Methods for Capturing Multimedia Content Item by a Mobile Device for Subsequently Matching Relevant Content to the Multimedia Content Item" –A method for capturing multimedia content item and matching relevant content respective thereto. The method comprises, receiving at least one	4	A

	multimedia content item captured by a mobile device operated by a user; generating a signature for the at least one captured multimedia content item; matching at least one relevant content item respective of the generated signature; and providing the at least one relevant content item respective of the signature of the at least one captured multimedia content element to the mobile device. *Filed as provisional patent application 61/766,703 on February 20, 2013; filed as US Patent application 14/167,388 on January 29, 2014; Published on June 29, 2014.*		
COR-054 *pending*	"A System and Methods for Creating a Database of Multimedia Content Elements Assigned to Users" – A system and methods for creating a database of multimedia content elements assigned to users. The system receives at least one multimedia content element and one or more parameters related to a user from a user device. The system then generates a signature of the at least one multimedia content element and searches for the existence of the multimedia content element in a database using the signature. A unique identifier is then generated to every non-existing multimedia content element respective of its signature and the one or more parameters related to the user. According to one embodiment, the multimedia content element is then stored in the database for further use. *Filed as provisional patent application 61/773,356 on March 6, 2013; filed as US patent application 14/198,154 on March 5, 2014; Published on July 3, 2014.*	5	B
COR-055 *pending*	"A System and Method for Generation of Taxonomies Based on Concepts" – A system for generating taxonomies respective of a plurality of signatures generated from one or more multimedia data elements (MMDEs). The system comprises a signature generator (SG) for generating at least a signature responsive to one or more MMDEs; a clustering processor (CP) for clustering a plurality of signatures received from the signature generator responsive of the plurality of MMDEs, and for	2	A

	determining a match between the one or more MMDEs respective of the signatures; and a concept generator (CG) for associating metadata between the matched MMDEs and generating the MMDEs taxonomy. *Filed as provisional patent application 61/773,356 on March 26, 2013; filed as US patent application 14/224,923 on March 25, 2014; Published on July 24, 2014.*		
COR-056 *pending*	"A System and Method for Receiving On-image Gestures as Search Queries" – A method and system for searching a plurality of information sources using an on-image gesture over a multimedia element. The method comprises receiving at least one on-image gesture over a multimedia element; generating at least one signature for the at least one multimedia element; generating a textual search query using at least the one generated signature and the on-image gesture; searching the plurality of information sources using the generated textual search query; and causing the display of search results retrieved from the plurality of information sources on a user device. *Filed as provisional patent application 61/775,958 on March 11, 2013; filed as US patent application 14/203,047 on March 10, 2014; Published on July 10, 2014.*	4	B
COR-057 *identified*	"On-line Cortex Generation" – a continuation-in-part of COR-025. An apparatus enables on-line generation of the cortex as described in COR-025.	4	A
COR-058 *prov.*	"A System and Methods thereof for Dynamically Matching an Advertisement to Multimedia Content" – A method for matching an advertisement item to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; extracting one or more parameters related to the user; searching for at least one advertisement item respective of the signature and the parameters related to the user; and causing the display of the at least one	3	A

	appropriate advertisement item within a display area of the web-page. Filed as provisional patent application 61/779,010 on March 13, 2013.		
COR-059 *identified*	"Evolving Cortex" – a continuation-in-part of COR-025. An apparatus enables the evolvement of the cortex respective of additional signatures collected.	4	A
COR-060 *identified*	"Spiral Cortex Generation" – a continuation-in-part of COR-025. An apparatus enables spiral generation of the cortex.	5	A
COR-061 *identified*	"Context Identification by Using Multiple Cortices" – *waiting to receive additional information from Igal to address this invention.*		
COR-062 *pending*	"A System and Methods Thereof for Visual Analysis of an Image on Web-page and Determination of a Correlation Between the Image and a Plurality of Key Words" – A method for matching a multimedia content element to a plurality of keywords. The method comprises receiving at least one multimedia content element; generating a signature of the at least one multimedia content element; determining the context of the multimedia content element; searching for at least one keyword respective of the context; and providing at least one key word and a quality score respective of the context. *Filed as provisional patent application 61/818,579 on March 13, 2013; converted to US patent application 14/267,990 on May 2, 2014; Published on September 9, 2014.*	3	A
COR-063 *identified*	"A System and Methods for Generation of Co-evolutionary Cortex" – *waiting to receive additional information from Igal to address this invention.*	3	A
COR-064 *identified*	"A System and Methods Thereof for Module Based Identification of Multimedia Elements" – A system and methods thereof for model based identification of multimedia elements. The method comprises receiving from a user device at least one multimedia content; extracting at least one multimedia element from the multimedia content; generating by a	3	B

	signature generator system (SGS) communicatively connected to the network at least one signature for each multimedia element; correlating the generated signature(s) to at least one model maintained in a data warehouse, each model comprises a plurality of previously generated signature; and updating at least one model upon determination of a correlation above a predetermined threshold between the generated signature(s) and the respective model.		
COR-065 *pending*	"A method for Providing Recommendations on Media Content" – A method and system for profiling interests of users based on multimedia content analysis and providing recommendations respective thereof is provided. The method comprises receiving a tracking information gathered with respect to an interaction of a user with at least one multimedia element displayed on a user node; determining a user impression respective of at least one multimedia content element using the received tracking information; generating at least one signature for the at least one multimedia element; determining at least a concept of the at least one multimedia element using the at least one generated signature, wherein an interest of the user is determined respective of the concept; creating a user profile to include at least the user interest; and providing recommendations to the user based on at least one of: the at least one signature for the at least one multimedia element, the user profile. *Filed as provisional patent application 61/833,028 on June 10, 2013; converted to US patent application 14/280,928 on May 19, 2014; Published on September 9, 2014.*	4	A
COR-066 *pending*	"A Method for Identifying Image Global Orientation and Scale" – a method comprising: receiving at least one multimedia content element from a user device; analyzing the at least one multimedia content element; generating at least one signatures respective of the analysis; and determination at least one scaling indicator for the image respective of the	2	A

	at least one signature. *Filed as US patent application 14/608,880 on 26-Jan-2015.*		
COR-067 *pending*	"A System and Methods for Identifying Clinical Indicators" – A method and system for generating user identifiers and searching for possible diagnoses respective thereof. The method comprises receiving at least one multimedia content element from a user device; generating at least one signature for the at least one multimedia content element; generating at least one identifier related to the user; searching for possible diagnoses through a plurality of data sources; and providing the possible diagnoses to the user device. *Filed as provisional patent application 61/839,871 on June 27, 2013; converted to US patent application 14/314,567 on June 25, 2014; Published on October 16, 2014.*	4	B
COR-068 *identified*	"A System and Method for Speech to Text Translation Using Cores of a Natural Liquid Architecture System" – a continuation-in-part of COR-005 that shows a method for speech to text translation using the NLA system.	4	B
COR-069 *pending*	"A System and Methods for Automatic Removal of Blacklisted Concept" – A system and methods thereof for identifying a multimedia content element contains at least one inappropriate concept. The method comprises an analysis of the multimedia content element and generation of signatures respective thereof. Each of the signatures generated represents a concept needed to be tested. The analysis include correlating the signatures generated respective of the multimedia content element and at least one signature of the at least one inappropriate concept. The system is configured to determine whether a match is identified, thereby preventing from the multimedia content element to be displayed. According to one embodiment, an inappropriate concept is determined respective of a user's characteristics. According to another embodiment, an inappropriate concept is retrieved from a data warehouse together with	4	B

	at least one signature respective thereto. *Filed as provisional patent application 61/839,885 on June 27, 2013; converted to US patent application 14/314,579 on June 25, 2014.*		
COR-070 *pending*	"A System and Methods for Enhancing Users Navigation Experience Through Sources of Multimedia Content" – A method for tagging multimedia content elements is provided. The method comprises receiving at least one multimedia content element from a user device; generating at least one signature for the at least one multimedia content element; generating at least one tag based on the least one generated signature, wherein the at least one tag is searchable by the user device; and sending the tag generated for the received multimedia content element to storage on the user device. *Filed as provisional patent application 61/860,261 on July 31, 2013; converted to US patent application 14/050,991 on October 10, 2013; published on February 6, 2014.*	5	A
COR-071 *identified*	"A System and Methods for Compression of Unordered Sets" – A system shows the ability of efficiently compress and store unordered sets of data.	3	A
COR-072 *identified*	"Metaphor Based Descriptors" – A system and method for identification of multimedia content elements based on metaphoric similarity to already known multimedia content elements.	2	A
COR-073 *pending*	"A System for Identification of Deviations from Common Patterns In Multimedia Content" – A system identifies deviation from common patterns within multimedia content. The system continuously receives multimedia content. The system analyzes the multimedia content and generates at least one signature respective of each segment in the multimedia content. The system then detects at least one periodic behavior within the multimedia content based on the signatures. Upon identification of at least one deviation from the identified at least one periodic behavior, the system generates a notification. *Filed as provisional patent application 61/889,542 on October 11, 2013; converted to US patent*	5	A

	application 14/509,543 on October 8, 2014.		
COR-074 *pending*	"A Method for Deep Content Identification of Food Substances" – A method for identifying nutritional data related to food substances contained in a multimedia content item is provided. The method includes analyzing a received multimedia content item to identify multimedia elements containing food substance; generating at least one signature for each identified multimedia element; querying a deep-content-classification (DCC) system for each of the identified multimedia elements to find at least one concept that matches at least one of the identified multimedia elements; matching the at least one signature of each of the at least one matching concepts to previously generated signatures of food substances maintained in a data warehouse; retrieving, for each of the at least one matching signature, nutritional data associated with the at least one matching signature from the data warehouse, thereby providing nutritional data for the food substances substance contained in the received multimedia content item; and sending the nutritional data to the user device. *Filed as provisional patent application 61/890,251 on October 13, 2013; converted to US patent application 14/095,865 on December 4, 2013; Published on April 3, 2014.*	4	B
COR-075 *pending*	"A System and Methods for Multimedia content Sharing" – A system for sharing multimedia content exists on a plurality of user devices. The system receives one or more multimedia content elements from a first user device. The system analyzes the multimedia content elements and generates one or more signatures respective thereto. The system then generates one or more tags based on the signatures and assigns the tags to their respective multimedia content elements. The system then stores the multimedia content elements together with the tags in a data storage unit accessible by a plurality of user devices. Upon receiving a query from at least a second user device, the system searches through the	4	A

	data storage unit for tags related to the user's query and provide the matching multimedia content elements to the user of the user device. *Filed as provisional patent application 61/884,081 on September 23, 2013; converted to a US patent application 14/449,957 on September 29, 2014.*		
COR-076 *pending*	"A Method for Identification of Multimedia Content Elements Based on Signatures and Environmental Variables" - A method and system for determining a context of a multimedia content element. The method comprises receiving at least a multimedia content element from a user device; generating at least one signature for the at least one multimedia content element, wherein each of the generated signatures represents a concept; determining at least a first contextual parameter respective of the at least one signature; receiving at least one environmental variable related to the at least one multimedia content element; determining at least a second contextual parameter respective of the at least one environmental variable; and determining the context of the at least one multimedia content element respective of at least the first contextual parameter and at least the second contextual parameter. *Filed as provisional patent application 61/889,545 on October 11, 2013; converted to US patent application 14/509,552 on October 8, 2014.*	5	A
COR-077 *pending*	"A Methods for Identification of 3D multimedia Content" – A method for analyzing a three-dimensional multimedia data elements, comprising :receiving at least one three-dimensional multimedia data element; partitioning the at least one three-dimensional multimedia data element to a first two-dimensional multimedia data element and a second two-dimensional multimedia data element; generating a signature for each of the two-dimensional multimedia data elements assembling at least a complex signature comprising the signatures generated for each of the two-dimensional multimedia data elements;	3	A

	and storing the signatures of each of the two-dimensional multimedia data elements and the complex signature in association with the three-dimensional multimedia data element in a storage unit. *Filed as provisional patent application 61/939,287 on February 17, 2014. Filed as US patent application 14/621,643 on 11-Jan-2015.*		
COR-078 *pending*	"A System and Method for Concepts Caching Using a Deep-content-classification (DCC) System" – A method for caching concept structures in a cache memory of a computing device. The method comprising collecting metadata related to the user of the computing device responsive of use of the computing device by the user; fetching from at least a data warehouse communicatively connected to the computing device via a network one or more concept structures respective of the received metadata, wherein each concept structure comprises a plurality of metadata associated with one or more multimedia content elements; and, storing the one or more concept structures in the cache memory, such that responsive to a request to analyze at least one multimedia content element, metadata is generated by the computing device respective of the at least one multimedia content element and matched by the computing device to the one or more concept structures stored in the cache memory. *Filed as provisional patent application 61/889,224 on November 3, 2013; converted to US patent application 14/530,918.*	3	A
COR-079 *pending*	"A System and Method for Identifying a Target Object In a Multimedia Content Element Based On The Context of The Multimedia Content Element" – A method and system thereof for identifying a target area in content collected by a computing device. The method comprises receiving at least one multimedia content element from the computing device; partitioning the multimedia content element into a number of partitions wherein, each partition having at least one object therein; generating at least one signature for each	4	A

	partition of the multimedia content element wherein, each of the generated signatures represents a concept; correlating the concepts respective of the generated signatures to one or more concepts exist in a data warehouse to determine the context of the multimedia content element; and identifying at least one partition of the multimedia content as a target area respective of the context of the multimedia content element. *Filed as provisional patent application 61,899,225 on November 3, 2013; Converted to US patent application 14/530,913 on November 3, 2014.*		
COR-080 *pending*	"A System and Methods thereto for Analyzing Multimedia Content elements and Ranking the Multimedia Content Elements Respective of the Analysis" – A method for providing one or more multimedia content elements respective of a query received from a user device. The method comprising: generating at least one signature for each multimedia content element stored in a data storage; generating at least one tag respective of the at least one generated signature, wherein the tag comprises one or more words; receiving at least one query from a user device; and generating a matching score for each multimedia content element respective of a match level between the at least one query and the at least one tag; and providing at least one multimedia content element to the user device respective of a matching score above a predetermined threshold value. *Filed as provisional patent application 61/899,226 on November 3, 2013; converted to US patent application 14/530,922 on November 3, 2014.*	4	B
COR-081 *pending*	"A System for Determination of User Attention Based on Pupil Response Clustering" -- a system identifies multimedia content viewed by a user on a user device. The system collects images of the user's pupil. The system identifies pupil responses responsive of the multimedia content. The system then determines the user's attention to the multimedia content respective of the pupil responses. *Filed as provisional patent*	3	B

	application 61/939,289 on February 13, 2014. Filed as US patent application 14/621,653 on 11-Jun-2015.		
COR-082 *pending*	"A System and Methods Thereof for Visual Analysis of Multimedia Content Elements and Matching Content to The Multimedia Content Elements Respective of the Analysis" – A method for searching for content items that relate to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; receiving at least one personal variable related to the user of the use node; searching for at least one advertisement item respective of the signature and the at least one personal variable related to the user of the user node; and causing the display of the at least one advertisement item within a display area of the web-page. *Filed as provisional patent application 61/928,461 on January 17, 2014; converted to US patent application 14/596,605 on January 14, 2015.*	3	B
COR-083 *pending*	"A Method for Tracking User Activities Respective of a Recipe and Multimedia Segments Captured by a User Device" – A system identifies deviation from a plurality of instructions and a plurality of ingredients specified in a recipe received as an input based on an analysis of multimedia content. The system generates a multimedia sequence of segments respective of the recipe. Then, the system generates a sequence of expected signatures respective of the multimedia sequence of segments. A sequence of multimedia segments is continuously received from the user device. At least one signature is generated by the system for each multimedia segment of the sequence of multimedia segments. The system then matches the signature generated for each multimedia segment of the sequence of multimedia segments to the expected sequence of signatures of the recipe and provides a	4	A

	notification to the user device upon identification of a deviation from the recipe. *Filed as provisional patent application 61/928,467 on January 17, 2014; converted to US patent application 14/596,553 on January 14, 2015.*		
COR-084 *pending*	"A Computing Device, a System and a Method for Parallel Processing of Data Streams" – a continuation application of COR-003. *Filed as US patent application 14/175,569 on February 6, 2014.*	4	A
COR-085 *pending*	"A System and Methods thereto for Analyzing Multimedia Content elements and Ranking the Multimedia Content Elements Respective of the Analysis" – A method and system for generating an advertisement effectiveness performance score for multimedia content elements displayed in a web-page. The method comprises receiving a uniform resource locator (URL) of the web-page; downloading the web-page respective of the received URL; analyzing the web-page to identify the existence of each of the plurality of multimedia content elements; generating at least one signature for each of the plurality of multimedia content elements, wherein each of the generated signatures represents a concept; determining a context of each multimedia content element; determining a context of the web-page respective of the context of each of the multimedia content elements; receiving data respective of the advertisement effectiveness of each of the plurality of multimedia content elements; generating an advertisement effectiveness performance score for each of the multimedia content elements respective of the context of the web-page and the advertisement effectiveness data respective of each of the plurality of multimedia content elements; and storing each of the multimedia content elements together with its respective advertisement effectiveness performance score in a data warehouse; *Filed as provisional patent application 61/939,290 on February 13, 2014. Filed as US patent application*	4	A

	14/621,661 on 11-Jun-2015.		
COR-086 *pending*	"A System for Customizing Multimedia Content of Web Pages" – A method for customizing multimedia data elements (MMDEs) of a web-page respective of users' characteristics. The method comprises receiving a request to display a web-page that includes a plurality of MMDEs from a user device; generating at least one signature for each of the plurality of MMDEs; determine at least one concept structure having associated MMDE and metadata based on the generated signatures. receiving one or more user characteristics related to the user of the user device; determining based on the identified one or more characteristics at least an alternate MMDE to replace one of the plurality of MMDEs, responsive of the one or more characteristics, the signatures and the metadata; and sending one or more MMDEs associated with the one or more concept structures for display in the web-page on the user device. *Filed as provisional patent application 61/928,468 on January 17, 2014; converted to US patent application 14/597,324 on January 17, 2014.*	3	A
COR-087 *identified*	"A Method for identification of The Energy Center of Multimedia Elements" - *waiting to receive additional information from Igal to address this invention.*	?	?
COR-088 *pending*	"A System and Methods for Assigning Virtual Content to Natural Content Exists in the Real World" – A continuation-in-part of COR-054 that enables users to add virtual content, such as posts and other visual or informative content to natural content exists in the real world. A user that adds content may further determines the privacy definition of such content. For example, a user can determine that only certain users will be able to view the v*irtual content; Filed as provisional patent application 61/931,919 on January 27, 2014. Filed as US patent application 14/606,546 on 27-Jan-2015.*	4	A
COR-089 *pending*	"A System and Method for Detecting an Incorrect Orientation of a Multimedia Content	3	B

	Item" – A method for detecting an incorrect orientation of a multimedia content item is provided. The method includes receiving the multimedia content item from a user device; generating by a signature generator system (SGS) at least one signature for each object shown in the multimedia content item; querying a deep-content-classification (DCC) system to find at least one concept that matches at least one object, wherein the querying of the DCC system is performed using the signatures generated for the objects; determining the correct orientation of the at least one concept respective of information maintained in a data warehouse; determining whether the orientation of the at least one object shown in the multimedia content item is the correct orientation, and therefore determining that the orientation of the multimedia content item is correct. According to an embodiment, the multimedia content item is rotated upon identification of incorrect multimedia content item. *Filed as provisional patent application 62/030,086 on July 29, 2014. Filed as US patent application 14,638,176 on 4-Mar-2015.*		
COR-090 *identified*	"A System and Methods Thereof for Big Data Compression" – TBD	?	?
COR-091 Place holder			
COR-092 *pending*	"A System and Method For Concepts Caching Using a Deep-Content-Classification (DCC) System" – A method for caching concept structures in a cache memory of a computing device. The method comprising collecting environmental variables related to the user of the computing device; fetching from at least a data warehouse communicatively connected to the computing device via a network one or more concept structures respective of the received environmental variables, wherein each concept structure comprises a plurality of metadata associated with one or more multimedia content elements; and, storing the one or more concept structures in the cache memory, such that responsive to a request to	2	A

	analyze at least one multimedia content element, metadata is generated by the computing device respective of the at least one multimedia content element and matched by the computing device to the one or more concept structures stored in the cache memory. *Filed as provisional patent application 61/986,245 on April 30, 2014. Filed as US patent application 14/700,801 on 30-Apr-2015.*		
COR-093 *pending*	"A Method For Identification of a Clothing Artifact" – A method for identifying metadata related to clothing artifacts contained in a multimedia content item is provided. The method includes analyzing a received multimedia content item to identify multimedia elements containing clothing artifacts; generating at least one signature for each identified multimedia element; querying a deep-content-classification (DCC) system for each of the identified multimedia elements to find at least one concept that matches at least one of the identified multimedia elements; matching the at least one signature of each of the at least one matching concepts to previously generated signatures of clothing artifacts maintained in a data warehouse; retrieving, for each of the at least one matching signature, nutritional data associated with the at least one matching signature from the data warehouse, thereby providing metadata for the clothing artifacts contained in the received multimedia content item; and sending the metadata to the user device. *Filed as provisional patent application 62/042,979 on August 28, 2014. Filed as US patent application 14/836,249 on 26-Aug-2015.*	3	A
COR-094 *pending*	"A Method For Recognition of Characters in Multimedia Content" - A method for recognition of natural language characters embedded in multimedia content. The method comprising: receiving the multimedia content; extracting at least an image of at least a character from the multimedia content; identifying at least a natural language character corresponding to the image of at least a	3	B

	character by a deep content classification (DCC) system; and storing the at least a natural language character in memory. *Filed as provisional patent application 61/948,050 on March 5, 2014. Filed as US patent application 14/638,210 on 4-Mar-2015.*		
COR-095 *pending*	"A Method For Linking Multimedia Data Elements to Web Pages" – A method and system for linking a multimedia data element (MMDE) and a webpage are provided. The method includes receiving a MMDE from a source; generating a signature representative of the MMDE using a plurality of computational cores; matching the generated signature with a plurality of signatures stored in a database to find at least one matching signature, wherein at least one of the stored signatures has at least one corresponding universal resource locator (URL) of a web page stored therein as metadata of the at least one of the stored signatures; and providing to the source at least a URL that is a metadata of a matched signature upon determination of a match between the generated signature and at least one of the plurality of signatures stored in the database. *Filed as US patent application 14/321,231 on July 1, 2014.*	3	A
COR-096 *issued*	"A System and Method For Signature-Based Unsupervised Clustering of Data Elements" A method and system for signature-based unsupervised clustering of data elements. The method comprises receiving a plurality of clusters; generating a triangular matrix respective of the clusters; generating a signature for each of the clusters; generating a match score between each of two different clusters; storing the match score in a cell of the triangular matrix corresponding to the two clusters; determining whether any of the match scores is above a predefined threshold value; clustering every two clusters that are determined to have a score above a predetermined threshold; and repeating the generation of a triangular matrix respective of the clusters until a single cluster is reached. The system comprises an interface; a processor; a	4	A

	memory for storing at least one cluster; and a memory coupled to the processor, the memory containing instructions that, when executed by the processor, configure the system to perform the steps of the method. *Filed as US patent application 14/334,903 on July 18, 2014. Issued as 9,104,777 on 11-Aug-2015.*		
COR-097 *issued*	"A Method For Unsupervised Clustering of Multimedia Data Using Large Scale Matching System" – A method and system for unsupervised clustering of multimedia content are provided. The method includes generating a plurality of clusters, each cluster containing at least a data element; generating for each of the plurality of clusters a corresponding signature; matching each of the signatures to all other signatures; determining a clustering score for each match; clustering multimedia data elements of each pair of clusters of the plurality of clusters that are determined to have a clustering score above a threshold value to create at least a first cluster; and storing the at least a first cluster in a storage unit. *Filed as US patent application 14/334,908 on July 18, 2014; allowed on December 12, 2014 as 9,009,086.*	4	A
COR-098 *pending*	"A System for Providing Multimedia Content Elements to Users Based on Textual Phrases" – A method and system for searching a plurality of information sources using a multimedia element. The method comprises receiving at least one multimedia element; generating at least one signature for the at least one multimedia element; generating a textual search query using at least the one generated signature; searching the plurality of information sources using the generated textual search query; and causing the display of search results retrieved from the plurality of information sources on a user device. *Filed as provisional patent application 62/030,075 on July 29, 2014. Filed as US patent application 14/811,195 on 28-Jul-2015.*	3	A
COR-099 *pending*	"A System for Providing Content Items to Users Respective of Products" – A method and	3	B

	system for providing customized content to users are provided. The system comprises receiving at least multimedia content element from a user device; identifying at least one identifier related to the user device; generating at least one signature for the at least one multimedia content element; determining at least one concept respective of the at least one signature; searching through a database for one or more content items in associated with the at least one identifier and the at least one concept; and providing the one or more content items to the user device. *Filed as provisional patent application 62/030,076 on July 29, 2014. Filed as US patent application 14/811,201 on 28-Jul-2015.*		
COR-100 Place holder			
COR-101 *pending*	"A Method for Adding Advertising Content to Multimedia Content Elements" - A method and system for adding advertising content to multimedia content elements. The method comprising: receiving by a server a request from a user device to identify a multimedia content element, the request including the multimedia content; generating by a the server at least one signature respective of the multimedia content element; determining by the server at least one identifier associated with the multimedia content element respective of the signature; checking by the server a database accessible by the server whether there is at least one advertising content item associated with the at least one identifier; and sending by the server the at least one advertising content item together with the at least one identifier upon determination that the at least one advertising content item is associated with the at least one identifier. *Filed as provisional patent application 62/030,077 on July 29, 2014. Filed as US patent application 14/811,209 on 28-Jul-2015.*	4	A
COR-102 *pending*	"A System and Methods Thereof for Identifying Trends in Data Sources" – A method and system for identifying trends in	4	A

	data sources. The system crawls through a plurality of data sources and collects multimedia content therefrom. The system then extracts visual elements from the multimedia content. Respective of each visual element, the system generates a signature. The system further collects environmental variables in association with the visual elements. The system continuously tracks correlations between the environmental variables and the generated signatures. Upon determination of a correlation above a certain threshold between a signature and an environmental variable, the system determines trends respective thereof. *Filed as provisional patent application 62/030,079 on July 29, 2014. Filed as US patent application 14/811,219 on 29-Jul-2015.*		
COR-107 *pending*	"A System and Methods Thereof for Embedding a Code in Multimedia Content Elements" – A method and system for adding at least one code to a multimedia content item. The method comprising receiving a request to add at least one code to a multimedia content item from a user device; identifying each of the elements of the multimedia content elements; generating a new multimedia content element that includes the at least one code respective of at least the identification of each of the multimedia content elements; and adding the newly generated multimedia content element to the multimedia content item. *Filed as provisional patent application 62/042,789 on August 28, 2014. Filed as US patent application 14/836,254 on 26-Aug-2015.*	5	B
COR-108 *drafting*	"A System and Methods For Picture obphuscation".	5	B
COR-109 *drafting*	"A Multi-Layer System for Signature Based Compression of Patterns" – A continuation-in-part of COR-025 adding a temporal dimension to the cortex generation.	3	A
COR-110 *drafting*	"A Multi-Layer System for Signature Based Compression of Patterns" – A continuation-in-part of COR-025 adding a feature selection by Cortex	3	A

COR-111 *pending*	"Systems and Methods For Generation of Searchable Structures Respective of Multimedia Data Content" – A method for creating a multimedia data search engine platform to allow fast search of multimedia content data elements (MMDEs). The method comprises collecting MMDEs from at least an external source storing MMDEs; generating a plurality of signatures for each of the collected MMDEs; generating signature reduced clusters (SRCs) for the collected MMDEs by clustering the plurality of signatures generated for each of the collected MMDEs; and generating concept structures from the generated SRCs, wherein the concept structures generated for different SRCs are utilized to compare between different MMDEs, thereby searching for an input MMDE that matches the collected MMDEs. *Filed as US patent application 14/509,588 on October 8, 2014.*	3	B
COR-112 *pending*	"A System and Method For Providing Content To a User Device Respective of Multimedia Content Elements" – A method and system for providing metadata associated with a multimedia content element to a web browser. The system receives at least one multimedia content element from a user device. The system further receives at least one query from a user device. The query may be a user's gesture or a textual query. The system then generates at least one signature respective of the at least one multimedia content element. The system then extracts from a database metadata associated with the at least one multimedia content element respective of the at least one signature and the at least one query. Then, the system provides the metadata to the user device. *Filed as provisional patent application 62/030,079 on July 29, 2014. Filed as US patent application 14/811,227 on 28-Jul-2015.*	3	B
COR-113 *pending*	"A System and Methods for Generation of Complex Signatures for Multimedia Data Content" – A continuation application of COR-030. *Filed as US patent application 14/530,970 on November 3, 2014.*	3	B

COR-114 *pending*	"A System and Method For Generation of Signatures for Multimedia Data Elements" – A system for generating signatures of an input multimedia data element comprises a partitioning unit for recursively partitioning the input multimedia data element into a plurality of multimedia data elements, wherein each of the plurality of the minimum size multimedia data elements is a minimal partition of the input multimedia data elements; a signature generator for generating for each of the plurality of minimum size multimedia data elements a respective signature; and a storage unit for storing the respective signatures respective of the plurality of minimum size multimedia data elements. *Continuation of COR-034. Filed as provisional patent application 62/030,079 on July 29, 2014.*	3	B
COR-115 *Allowed*	"A System and Method For Generation of Signatures for Multimedia Data Elements" – A continuation of COR-025; *Filed as US patent application 14/573,652 on December 17, 2014. Allowed on 22-Jul-2015.*	4	A
COR-116 *Pending*	"A System and Method For Generation of Signatures for Multimedia Data Elements" – A continuation of COR-028. *Filed as US patent application 14/620,863 on 4-Jun-2015.*	2	A
COR-117 *pending*	"A System and Methods for Generation of a Concept Based Database" – A system for generating concept based database respective of a plurality of multimedia data elements (MMDEs). The system comprises an attention processor (AP) for generating a plurality of items from a received MMDE of the plurality of MMDEs and determining which of the generated items that are of interest for signature generation; a signature generator (SG) for generating at least a signature responsive to at least an item of interest of the received MMDE of the plurality of MMDEs; a clustering processor (CP) for clustering a plurality of signatures received from the signature generator responsive of the plurality of MMDEs, and for creating a signature reduced cluster (SRC) of the cluster; a concept	3	A

	generator (CG) for associating metadata with the SRC and matches the SRC with previously generated SRC such that SRCs that match form a concept structure comprised of a plurality of SRCs and their associated metadata; and, an index generator (IG) for generating a plurality of compressed conceptual representations for each of the plurality of MMDEs stored in database. *Filed as US patent application 14/643,694 on 2-Jul-2015.*		
COR-118 *pending*	"Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof" – Content-based clustering, recognition, classification and search of high volumes of multimedia data in real-time. The embodiments disclosed herein are dedicated to real-time fast generation of signatures to high-volume of multimedia content-segments, based on relevant audio and visual signals, and to scalable matching of signatures of high-volume database of content-segments' signatures. The embodiments disclosed herein can be implemented in any applications which involve large-scale content-based clustering, recognition and classification of multimedia data, such as, content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, object recognition, video search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. *Continuation of COR-035. Filed as US patent application 13/682,132 on February 11, 2015; Published on June 4, 2015.*	3	A
COR-119 *identified*	"A System and Methods for In Context Translation from One Natural Language to Another Natural Language" – A system is configured to receive a word within a sentence as well as the sentence itself and match words and phrases of the sentence to multimedia content. Respective thereto the system is configured to match multimedia content having	3	A

	metadata in one natural language to multimedia data having metadata in another natural language. Based on the matching the system is configured to determine the appropriate translation in-context. *Continuation application of COR-018.*		
COR-120 *identified*	"System and Methods for Identification of Key Points In Multimedia Data Elements" – A system and methods for identification of key points in a multimedia data element. The key points in the multimedia data element enable identification of multimedia content elements shown in the multimedia data element using computer vision systems. The system analyzes the multimedia data element starting from the edges of the multimedia data element to identify a plurality of candidate key points. The system then analyzes the plurality of candidate key points to determine a set of properties for each of the plurality of candidate key points. Respective of the set of properties of each of the plurality of candidate key points, the system selects a plurality of key points.	4	A

Following is a table that summarizes the ranking of the inventions based on our findings. The scores are based on our experience, however, they should not be viewed as a categorical review, but rather as a basis for a more detailed discussion leading to the decision on what to do with each category of invention.

IP Standing

Business Ranking	1	2	3	4	5
A		COR-028[I] COR-032[II] COR-043[IV] COR-044[IV] COR-053[III] COR-055[III] COR-066[II] COR-072[IV] COR-092[II] COR-116[II]	COR-011[I] COR-015[IV] COR-018[I] COR-019[I] COR-026[I] COR-029[I] COR-033[I] COR-049[II] COR-052[III] COR-038[IV] COR-054[III] COR-058[III] COR-062[III] COR-063[IV] COR-071[IV] COR-077[II] COR-078[II] COR-086[II] COR-093[II] COR-095[II] COR-109[IV] COR-110[IV] COR-117[II] COR-118[II] COR-119[IV]	COR-004[I] COR-008[I] COR-016[IV] COR-021[IV] COR-031[II] COR-035[I] COR-036[I] COR-037[I] COR-020[IV] COR-041[III] COR-042[II] COR-048[II] COR-053[II] COR-057[IV] COR-059[IV] COR-065[II] COR-075[II] COR-079[II] COR-083[II] COR-084[II] COR-088[II] COR-096[I] COR-097[I] COR-098[II] COR-099[II] COR-101[II] COR-102[II] COR-115[I]	COR-001[V] COR-002[V] COR-003[I] COR-013[I] COR-017[IV] COR-025[I] COR-046[II] COR-047[IV] COR-060[IV] COR-070[II] COR-073[III] COR-076[III]
B			COR-005[II] COR-006[II] COR-007[II] COR-030[I] COR-039[II] COR-050[II] COR-064[IV] COR-068[IV] COR-081[III] COR-082[II] COR-089[II] COR-094[II] COR-111[II] COR-112[II] COR-113[II] COR-114[II]	COR-012[I] COR-014[IV] COR-020[II] COR-022[IV] COR-034[I] COR-040[II] COR-045[II] COR-051[II] COR-056[II] COR-067[II] COR-069[II] COR-074[II] COR-080[II] COR-085[II] COR-120[IV]	COR-009[II] COR-010[II] COR-023[I] COR-024[IV] COR-027[I] COR-054[II] COR-107[II] COR-108[IV]
C					

(I) – allowed/issued; (II) patent filed; (III) provisional filed; (IV) identified; (V) abandoned/not filed

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RECOMMENDATIONS AND SUGGESTED DECISIONS

Resulting from the above analysis we would like to make the initial recommendations below. We suggest that these recommendations be discussed in a management meeting so as to agree on the final scores of the inventions, allocate budgets, determine schedules and begin actual work on the inventions.

1. The following inventions are now being prepared to be filed as US patent applications: COR-047, COR-090, COR-108, COR-109, COR-110, COR-116, COR-117 and COR-120.

2. It is important to make sure that patentable information is not publically disclosed prior to filing of patent applications. In urgent cases a provisional patent application can be filed to ensure a shorter response time. While USA law provides for certain grace periods it should be noted that changes in the law may have changed such grace periods in significant ways. Please consult us on these issues on a regular basis. Specifically, the USA has completed the move from the *first-to-invent* doctrine to the *first-inventor-to-file*. As a result an inventor(s) who has filed before another inventor will have priority to get a patent, as opposed to the older doctrine. Therefore, it may be preferable to attempt to file at least a provisional patent applications at this stage.

3. This document should be considered a working document that is to be updated as new inventions are made. This will enable the tracking of the inventions and ensure that proper decisions may be taken.

If you have any further questions or requests please do not hesitate to be in touch with us. We can be reached by e-mail at reuven@hh-law.co.il or or@hh-law.co.il, Reuven's cell phone at 052-325-8840, Or's cell 050-731-1814 or the office at 03-608-1122.

Sincerely Yours,

Reuven Marko
Technical Advisor Specializing in Patents

Cc: Adv. Or Agassi – HH Law

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6 March 2016

Ms. Karina Odinaev, Mr. Igal Raichelgauz, Prof. J. Zeevi
Cortica Ltd.
12 David Khakhmi Street
Tel Aviv

Re: Updated Intellectual Property Audit

Dear All,

We are pleased to provide you with this IP Audit Report based on our last interviews wih the teams and the checks we have done since. Based on this information we have prepared an updated list of inventions that we believe to be worthy of patent protection. This list is discussed in detail below. The list further includes also all inventions previously discussed as well as the status of each such invention. Like always, we do remind you that this document does not constitute a legal opinion.

HIGHLIGHTS

1. We have identified multiple new inventions that potentially are suitable for patent protection. We recommend considering filing three of these inventions at least as provisional patent applications.

2. We recommend that this document be updated with any new inventions as they are identified by your team. Thereafter the work plan can be updated and decisions made regarding future patent applications.

3. It is essential to make sure that inventions are filed prior to an offer for sale or public disclosure. Not doing so may adversely affect the ability to protect IP rights. Changes upcoming in the USA patent law may further require consideration as they become law.

4. To date Cortica has 23 issued patents.

5. We do want to draw your attention to the fact that the USA has moved away from the first-to-invent doctrine to the first-inventor-to-file doctrine on March 16, 2013 which has considerable impact on the way priority dates are determined. Furthermore, it is

essential to make sure that inventions are filed prior to an offer for sale or public disclosure. Not doing so may adversely affect the ability to protect IP rights.

THE INVENTIONS

As noted above, based on our discussions, interviews and document provided, we have come up with a proposed list of inventions that we believe should be considered for patent applications by the company. We have conducted an initial basic prior art search on the proposed inventions, based on the USPTO database. The "IP standing" provides our initial view of how likely the invention is to stand against the prior art that we have encountered. The "IP standing index" goes from "1" (poor rating: 40+ potentially relevant prior art patents) to "5" (good rating: less than 10). The index may go up or down based on further evaluation of the prior art. A "Business Value Ranking", based on our business judgment, is also provided, where "A" is the most important, "B" in the mid range, and "C" being of the least value. Patents that were filed as non-provisional applications are indicated in the following table in green.

Invention	**Description**	**IP Standing**	**Value Ranking**
COR-001 *abandoned*	"Natural Liquid Architecture (NLA) Technology" –architecture and embodiments thereof of asynchronous, adaptively-reconfigurable and fault tolerant processors implemented in "Natural Liquid Architecture" (NLA) technology. The NLA consists of a large ensemble (of the order of thousands or more) of asynchronous units, executing in parallel subsets of instructions of a complex task, or of multiple tasks in varying environments. NLA cores are enabled to decompose a complex computational task, into many subsets of simpler (complexity-wise) computational tasks, through all stages of processing flow. The NLA processors are modularly designed, and their implementation is based on hybrid analog and digital VLSI state-of-the-art techniques. *Filed in Israel as patent application 171577, October 26, 2005. Decision not to continue with the patent due to low value to Israel market.*	5	A
COR-002 *abandoned*	"Fast String-Matching by Natural Liquid Architecture (NLA)" – a method and its technological embodiments for processing and matching a stream of data such as encountered in string matching and regular expressions identification. The approach is based on	5	A

	implementation of Natural Liquid Architecture (NLA) technology. The streaming data is fed into all the cores in parallel, driving the cores to produce a certain signatures in response to the injected bit-stream. The final output of the processor is based on the integrated responses of the SP-NLA cores. The SP-NLA processor is programmed for detection of a certain class of strings and regular expressions. Subsequent to the programming phase, SP-NLA turns into a memory-less filter which inspects the streaming data. *Filed in Israel as patent application 173409, January 29, 2006. Decision not to continue with the patent due to low value to Israel market.*		
COR-003 *issued*	"A Computing Device, a System and a Method for Parallel Processing of Data Streams" – a computing arrangement for identification of a current temporal input against one or more learned signals. The arrangement comprising a number of computational cores, each core comprises properties having at least some statistical independency from other of the computational, the properties being set independently of each other core, each core being able to independently produce an output indicating recognition of a previously learned signal, and at least one decision unit for receiving the produced outputs from the number of computational cores and making an identification of the current temporal input based the produced outputs. *Filed as PCT/IL2006/001235, October 26, 2006, and converted to a US 12/084,150 and EP application 06809796.3 in April 2008. Priority claimed from COR-001 and COR-002. Allowed as US patent 8,655,801 on September 20, 2013, and issued as EP patent 1949311 on August 8, 2013*	5	A
COR-004 *issued*	"Large-Scale Matching System and Method for Multimedia Deep-Content-Classification" – a realization of the NLA architecture embedded in large-scale matching system for multimedia deep content classification. The system receives an input stream, e.g., multimedia content	4	A

	segments, injected in parallel to all computational cores of the LNA. The cores generate a compact signature for the specific content segment, and/or for a certain class of equivalence and interest of content-segments. For large-scale volumes of data, the signatures are stored in a database of size N, allowing match between the robust signature of certain content-segment and the database, in low-cost, in terms of complexity, i.e. <=O(logN), and response time. *Filed in Israel August 21, 2007 185414. Calling for priority claimed from COR-001, COR-002 and COR-003. Filed as US patent application 12/195,863, and PCT/US2008//073852. US patent application Published on 30-apr-2009; allowed: August 6, 2013; and issued: December 4, 2012. US patent No. 8,326,775. UK patent GB2463836.*		
COR-005 *pending*	"A Method for Generating Cores of a Natural Liquid Architecture (NLA) System for Audio Applications" – in order to achieve optimal results when the input signal to the system is known to be an audio signal, the cores comprising the LNA system should be programmed in a specific way. The method teaches such a way that maintains a high degree of independency between the cores. It further enables the matching of many-to-one, e.g, a match can be found even if the audio arrives from different recording sources. *Filed as provisional patent application 61/833,931 on June 12, 2013; Merged with COR-006*	3	B
COR-006 *pending*	"A Method for Generating Cores of a Natural Liquid Architecture (NLA) System for Video Applications" – in order to achieve optimal results when the input signal to the system is known to be a video signal, the cores comprising the LNA system should be programmed in a specific way. The method teaches such a way that maintains a high degree of independency between the cores. It further enables the matching of many-to-one, e.g, a match can be found even if the subject for matching is presented in one case in a different angle than in another case. *Filed as provisional*	3	B

	patent application 61/833,932 on June 12, 2013; converted to US patent application 14/302,487 on June 12, 2014.		
COR-007 *pending*	"A Method and System for Deep Content Classification" – A method for associate metadata to a multimedia content based on finding matches to similar multimedia content. A given input multimedia content is matched to at least another multimedia content with corresponding metadata. Upon determination of a match, the corresponding metadata is used as metadata of the given multimedia content. When a large number of multimedia data is compared a ranked list of metadata is provided. The most appropriate metadata is associated to the given multimedia content based on various criteria. The method can be implemented in any applications which involve large-scale content-based clustering, recognition and classification of multimedia data, such as, content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, object recognition, video search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. *CIP of COR-003 and COR-004. Filed as US patent application 12/348,888; Published on April 30, 2009.*	3	B
COR-008 *issued*	"A Method and System for Unsupervised Classification of Large Database Content" – A method and apparatus for clustering a plurality of data elements. The method comprises receiving a plurality of cluster elements, each cluster element containing at least a data element; generating a clustering score for each cluster element of the plurality of cluster elements versus all other cluster elements of the plurality of cluster elements using a computing device; determining a size of a diagonal matrix having a size corresponding to the number of the plurality of cluster elements; placing the clustering score in a diagonal matrix in storage one clustering score for each pair of cluster	4	A

	elements; creating a new cluster element for each two cluster elements in the diagonal matrix having a clustering score that exceeds a threshold; and storing generated new cluster elements in the storage. *CIP of COR-003 and COR-004. Filed as US patent application 12/507,489; Published on November 12, 2009; allowed: October 29. 2012. Issued as US patent 8,386,400 on February 26, 2013.*		
COR-009 *pending*	"A Method for Using Pictures as Search Objects Using a NLA System" – A system enables searching for information over the web by using multimedia content as an input search query. The system generates one or more signatures for the search query and finds content that may be linked to the input search object respective thereof. According to one embodiment, if an image of a certain brand of car is received as an input, links on the web are shown for that brand of car, or images of other cars in the respective class of cars. *Filed as US patent application 13/773,112 on February 21, 2013; Published on July 25, 2013.*	5	B
COR-010 *pending*	"Deep Content Recognition of Reduced Data Sets Based on Sparse Representation within Large Scale Databases" – A method is used to match inputs against available content even if sparse information is available. For example, in the case where audio is to be matched, the medium used for recording may impact the recognition of the content or the speaker. However, the method enables matching through information of other audio clips that may use the same medium by other speakers to understand and resolve the matching. *Filed as US patent application 14/087,800 on November 22, 2013.*	5	B
COR-011 *issued*	"Signature Based System and Methods for Generation of Personalized Multimedia Channels" – A system for generating personalized channels of multimedia content. The system comprises an interface to one or more multimedia sources, wherein the multimedia sources provide multimedia content to the personalized channels of multimedia	3	A

	content; and a server for receiving multimedia content from the one or more multimedia sources through the interface and for serving selected multimedia content to users of the system over one or more of the personalized channels; wherein a user of the system receives personalized multimedia content gathered by the server into the one or more of the personalized channels responsive of preferences of the user as observed by the system for the user. *CIP of COR-003 and COR-004. Filed as US patent application 12/434,221; Published on August 27, 2009; Allowed: September 28, 2011; issued: February 7, 2012. US patent 8,112,376.*		
COR-012 *issued*	"A System and Methods for Generation of Complex Signatures for Multimedia Data Content" – A system and method for generating complex signatures for a multimedia data element based on signatures of minimum size multimedia data elements. Accordingly a partitioning unit partitions the multimedia data content to minimum size multimedia data elements. A signature generator generates signatures for each of the minimum size multimedia data elements. An assembler unit assembles a complex signature for a higher level partition multimedia data element by assembling respective complex signatures or signature of minimum size multimedia data elements of an immediately lower partition level. Multimedia data elements include but are not limited to, images, graphics, video streams, video clips, audio streams, audio clips, video frames, photographs, images of signals, combinations thereof, and portions thereof. *CIP of COR-003, COR-004 and COR-007.Filed as US patent application 12/538,495; Published on December 17, 2009; allowed: June 11, 2012; issued November 13, 2012. US patent 8,312,031*	4	B
COR-013 *issued*	"A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content" – A system that is capable of generating signatures for multimedia	5	A

	data content creates multimedia data elements thereof and selects those which are meaningful elements. Signatures respective of the elements are generated and clustered and then reduced to generate a cluster reduction for each generated cluster. A conceptron is then generated by associating the signature reduction with metadata associated with the respective multimedia data elements and the clusters represented by the cluster reduction. *CIP of COR-003, COR-004, COR-007, and COR-012. Filed as US patent application 12/603,123 on October 21, 2009; Published on February 18, 2010; allowed: May 11, 2012: issued: September 11, 2012. US patent 8,266,185*		
COR-014 *identified*	"A System and Methods for Matching Content to Conceptrons" – a continuation-in-part of COR-013 this invention that shows the ability to add a matching process or unit and thereby enable fast matching between multimedia content received for checking and the conceptrons stored in the system. This can be used in specific expert systems as well as general web checking systems.	4	B
COR-015 *identified*	"A System and Method thereof for Content Filtering and Content Rating" – supply of multimedia content requires, at times, filtering the content to avoid transmission of inappropriate content from a source to a target. Such filtering takes place by comparing the signature of the content to similar content previously identified. For example, adult content is identified by the system to create an initial reference source of such content. A new content can be now filtered through the system by determining the new content signature and comparing against the signature database of the system. Upon determination of a match and/or similarity the content is either not provided or an alert is generated. The system can also be used to rate content. For example, adult content can be rated by comparison to other such content already rated by the system.	3	A
COR-016 *identified*	"A System and Methods Thereof for Reducing Storage Space of Multimedia Content" –	4	A

	multimedia content requires significant amounts of storage. Much of the content is repetitive by nature, loaded to distribution systems from various sources. At times smaller portions of a larger clip are also stored too. The system detects such duplications through application of the Cortica signature analysis and then replaces the actual content with a pointer to the place where the content actually resides. In addition, if a portion of a clip is to be viewed, then the starting point and the ending point are also provided, or otherwise used to enable viewing of the clip from and to the desired points.		
COR-017 *identified*	"An Unsupervised Learning System and Methods Thereof" – continuation-in-part of COR-013 adding various components to the system and showing how together they enable the creation of an auto-learning system.	5	A
COR-018 *issued*	"A System and Methods for In Context Translation from One Natural Language to Another Natural Language" – A system is configured to receive a word within a sentence as well as the sentence itself and match words and phrases of the sentence to multimedia content. Respective thereto the system is configured to match multimedia content having metadata in one natural language to multimedia data having metadata in another natural language. Based on the matching the system is configured to determine the appropriate translation in-context. *Filed as US patent application 13/773,118 on February 21, 2013; Published on June 27, 2013. Issued as 9,087,049 on 21-Jul-2015.*	3	A
COR-019 *Allowed*	"A System and Method thereof for Brands Monitoring and Trends Analysis based on Deep-Content-Classification" – A system analyzes trends respective of brands' monitoring over the web. A method begins when a server receive a request to monitor a brand. In one embodiment, the server is configured to generate one or more signatures respective of the brand. The sever crawls through one or more web sources to identify	3	A

	multimedia content. Further, the server identifies existence of the brand within the multimedia content. The server analyzes the behavior of the brand within the multimedia content for the purpose of comparing the brand's behavior to previously identified behavior of the brand. The system contains a database that maintains the previously identified behaviors. The server is configured to identify changes in the brand's behavior respective thereof. *Filed as provisional patent application 61/789,576 on March 15, 2013; converted to US patent application 13/874,115 on April 30, 2013; Published on September 12, 2013. Allowed on 14-Aug-2015.*		
COR-020 *pending*	"A System and Method thereof for Distributed Search-by-Content and Content-based Advertising" – A system and methods thereof for determining a concept for advertisement to be displayed on a user node respective of the user characteristics and a content based search. A server extracts at least one multimedia content element from a web-page displayed on the user node. The server generates at least one signature respective of the multimedia content element. Further, the server generates a concept adapted to the user respective of the at least one signature generated and user characteristics. The server is configured to search for advertisement items that are relevant to the user interest respective of the concept. Further, the server may cause the display of the advertisement item within a display area of the web-page. *Filed as provisional patent application No. 61/773,837 on March 7, 2013; converted to US patent application 14/096,802 on December 4, 2013.*	4	B
COR-021 *identified*	"A System and Methods Thereof for Concepts Hierarchy" – TBD	4	A
COR-022 *identified*	"A Method for Generation of Cores for a Computing Device and a System Thereof for Parallel Processing of Data Streams" – a CIP of COR-003 and COR-004 that describes the generation of cores and nodes thereto that are distributed in an N^{th} dimensional sphere in such	4	B

	a way so as to allow effective object recognition.		
COR-023 *issued*	"A System and Method for Mapping Real-World Images into Web Domains" – An image relating to the real world is captured and a signature thereof is associated thereto, for example, the Cortica kind of signatures. The signature of the real world image is compared with clusters of signatures and signatures of clusters that each has a URL associated thereto. Upon detection of a match associating the URL to the newly captured real-world image. The advantage being that in this way there is no need for identification of the actual content of the image, a tedious and non-scalable mission. *Filed as US patent application 12/822,005 on 23-Jun-10; Published on October 14, 2010; issued on August 26, 2014 no. 8,818,916.*	5	B
COR-024 *identified*	"A System and Method for Providing an Advertisement on a Web Page Responsive of an Image on that Web Page" – in many of the social networks images appear frequently, however, there is no metadata associated to these images, or metadata that is meaningful to the inference of the content of the image. Therefore providing an appropriate advertisement is difficult. Accordingly the system generates a signature for the image and deduces from either a process of image-to-text based on signatures, extraction of taxonomies and context to product the appropriate advertisement, or by associating the signatures of the image to the signatures of advertisement and identifying when a match occurs.	5	B
COR-025 *issued*	"A Multi-Layer System for Signature Based Compression of Patterns" – By using a plurality of layers based on the signature concepts of previous patents of Cortica there is provided an improved representation of input patterns in terms of: compression, robustness, and repeatability. More over the system becomes more generalized and invariant. A cortical layer, according to the invention, is composed of N patterns. The input is matched to all *N* patterns in order to produce a new signature in	5	A

	the form of *n* nearest-neighbor cortical pattern-ids. Cortical layer can be viewed as a sphere with two parameters: *R*max - defines the external-radius of the sphere, and is determined by the probability of random pattern to get a single match; and, *R*min - defines the internal-radius of the sphere, and is determined by the probability of random pattern to get a single match. All *N* pattern-ids are placed in the sphere between Rmin and Rmax. The input pattern approaches the sphere by lowering its threshold for a match. All the cortical patterns are competing and only the *n* nearest pattern win to represent the input pattern. *Filed as provisional patent application 61/763,554 on February 12. 2013; converted to US patent application No. 13/874,159 on April 30, 2013; PCT application PCT/US13/46155 filed on June 17, 2013. US patent 8,922,414 issued on December 30, 2014; JP application filed on November 4, 2014; CN application filed on December 9, 2014; UK application 1417750.5 filed on October 7, allowed on 3-Jan-2016; 2014; DE application filed on October 8, 2015; KR application filed on October 8, 2015.*		
COR-026 *Allowed*	"A System and Methods thereof for Visual Analysis of an Image on a Web Page and Matching an Advertisement Thereto" – A method for matching an advertisement item to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; searching for at least one advertisement item respective of the signature; and causing the display of the at least one advertisement item within a display area of the web-page. *Filed as US patent application 13/624,397 on 21-Sep-12; Published on January 17, 2013. Allowed on 4-Jun-2015.*	3	A
COR-027 *Issued*	"A System and Methods Thereof for Dynamically Associating a Link to an Information Resource With a Multimedia Content Displayed In a Web-page" – A method	5	B

	for associating at least a link to an information resource with a multimedia content element. The method comprises identifying at least one multimedia content element in a web-page, wherein a uniform resource locator (URL) of the web-page is received from any one of a user device and a web server hosting the web-page; generating a signature for at least a portion of the at least one identified multimedia content element; determining at least a link to the at least a portion of the content respective of the generated signature; and providing the web-page with the at least a link respective of the signature of the at least a portion of the at least one multimedia content element to the user device. *Filed as US patent application 13/685,182 on November 26, 2012; Published on March 28, 2013. Allowed on 2-Sep-2015; Issued as US Patent 9,235,557 on 21-Jan-2016.*		
COR-028 *issued*	"Signature Based System and Methods for Generation of Personalized Multimedia Channels" – A system for generating personalized channels of multimedia content. The system comprises an interface to one or more multimedia sources, wherein the multimedia sources provide multimedia content to the personalized channels of multimedia content; and a server for receiving multimedia content from the one or more multimedia sources through the interface and for serving selected multimedia content to users of the system over one or more of the personalized channels; wherein a user of the system receives personalized multimedia content gathered by the server into the one or more of the personalized channels responsive of preferences of the user as observed by the system for the user. *Continuation of COR-011. Filed as US patent application No. 13/344,400 on January 5, 2012; Published on May 3, 2012; Allowed on October 5, 2014. Issued as 8,959,037 on 17-Feb-2015.*	2	A
COR-029 *issued*	"A System and Methods Thereof for Generation of Conceptrons Respective of Multimedia Data Content" – A system that is	3	A

	capable of generating signatures for multimedia data content creates multimedia data elements thereof and selects those which are meaningful elements. Signatures respective of the elements are generated and clustered and then reduced to generate a cluster reduction for each generated cluster. A conceptron is then generated by associating the signature reduction with metadata associated with the respective multimedia data elements and the clusters represented by the cluster reduction. *Continuation of COR-013. Filed as US patent application 13/602,858 on 4-Sep-12; Published on December 27, 2013; issued 8,868,619 on October 29, 2014.*		
COR-030 *issued*	"A System and Methods for Generation of Complex Signatures for Multimedia Data Content" – A system and method for generating complex signatures for a multimedia data element based on signatures of minimum size multimedia data elements. Accordingly a partitioning unit partitions the multimedia data content to minimum size multimedia data elements. A signature generator generates signatures for each of the minimum size multimedia data elements. An assembler unit assembles a complex signature for a higher level partition multimedia data element by assembling respective complex signatures or signature of minimum size multimedia data elements of an immediately lower partition level. Multimedia data elements include but are not limited to, images, graphics, video streams, video clips, audio streams, audio clips, video frames, photographs, images of signals, combinations thereof, and portions thereof. *Continuation of COR-012.Filed as US patent application 13/668,559 on November 5, 2012; Published on March 27, 2013; Allowed on July 2, 2014; Issued US patent 8,880,539 on November 4, 2014.*	3	B
COR-031 *pending*	"A System and Methods for Generation of Context Based on a Concept" – A system determines the context of a multimedia content exists in a web-page. The system generates at	4	A

	least a signature for each element of a multimedia content displayed in a web-page. A server analyzes the context of each of the signatures and determines the context of the multimedia content respective thereto. *Filed as US patent application 13/770,603 on February 19, 2013; Published on July 25, 2013.*		
COR-032 *pending*	"A System and Methods for Generation of Concept Based on a Context" – A method and server for analyzing a multimedia content item are provided. The method comprises receiving a multimedia content item; extracting from the multimedia content item a plurality of multimedia elements; generating at least one signature for each of the plurality of multimedia elements; for each of the plurality of multimedia elements, querying a deep-content-classification (DCC) system to identify at least one concept that matches one of the plurality of multimedia elements, wherein querying is performed using the at least one signature generated for the multimedia elements and wherein an unidentified multimedia content element does not have a matching concept; generating a context for the multimedia content item using matching concepts; and characterizing each unidentified multimedia element using the generating context and signatures of the matching concepts. *Filed as Provisional patent application 61/839,883 on June 27, 2013; converted to US patent application 14/096,901 on December 4, 2013.*		
COR-033 *Issued*	"A System and Methods for Generation of a Concept Based Database" – A system for generating concept based database respective of a plurality of multimedia data elements (MMDEs). The system comprises an attention processor (AP) for generating a plurality of items from a received MMDE of the plurality of MMDEs and determining which of the generated items that are of interest for signature generation; a signature generator (SG) for generating at least a signature responsive to at least an item of interest of the received MMDE	3	A

	of the plurality of MMDEs; a clustering processor (CP) for clustering a plurality of signatures received from the signature generator responsive of the plurality of MMDEs, and for creating a signature reduced cluster (SRC) of the cluster; a concept generator (CG) for associating metadata with the SRC and matches the SRC with previously generated SRC such that SRCs that match form a concept structure comprised of a plurality of SRCs and their associated metadata; and, an index generator (IG) for generating a plurality of compressed conceptual representations for each of the plurality of MMDEs stored in database. *Filed as US patent application 13/766,463 on February 13, 2013; Published on June 20, 2013; Allowed as 9,031,999 on January 5, 2015.*		
COR-034 *issued*	"System and Method for Generation of Signatures for Multimedia Data Elements" – A system for generating signatures of an input multimedia data element comprises a partitioning unit for recursively partitioning the input multimedia data element into a plurality of multimedia data elements, wherein each of the plurality of the minimum size multimedia data elements is a minimal partition of the input multimedia data elements; a signature generator for generating for each of the plurality of minimum size multimedia data elements a respective signature; and a storage unit for storing the respective signatures respective of the plurality of minimum size multimedia data elements. *Continuation of COR-012. Filed as US patent application 13/668,557 on November 5, 2012; Published on March 7, 2013; US patent 8,880,539 issued on November 4, 2014.*	4	B
COR-035 *issued*	"Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof" – Content-based clustering, recognition, classification and search of high volumes of multimedia data in real-time. The embodiments disclosed herein are dedicated to real-time fast generation of signatures to high-volume of	4	A

	multimedia content-segments, based on relevant audio and visual signals, and to scalable matching of signatures of high-volume database of content-segments' signatures. The embodiments disclosed herein can be implemented in any applications which involve large-scale content-based clustering, recognition and classification of multimedia data, such as, content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, object recognition, video search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. *Continuation of COR-004. Filed as US patent application 13/682,132 on November 20, 2012; Published on March 28, 2013. Issued as 8,990,125 on 24-Mar-2015.*		
COR-036 *issued*	"A Computer Software Product for Unsupervised Classification of Large Database Content" – An apparatus and method for reducing an amount of storage required for maintaining a large-scale collection of multimedia data elements by unsupervised clustering of multimedia data elements. The method comprises processing the multimedia data elements in the large-scale collection to generate a first cluster of multimedia data elements; storing the first cluster in a storage unit; repeating the generation of a new cluster from the first cluster and un-clustered multimedia elements in the large-scale data collection until a single cluster is reached; and storing a new cluster generated at each iteration in the storage unit, wherein a N-th cluster generated at the N-th iteration is stored in the storage unit, wherein the amount of storage requires to store the N-th cluster is less than an amount of storage of the large-scale data collection, thereby the unsupervised clustering enables reducing the storage amount requires to store the multimedia data elements in the large-scale collection. *Continuation of COR-008. Filed as US patent application 13/731,921 on*	4	A

	December 31, 2012; Published on March 30, 2013; US patent 8,799,196 issued on August 5, 2014.		
COR-037 *issued*	"A Method for Unsupervised Clustering of Multimedia Data Using a Large-Scale Matching System" – A method and apparatus for unsupervised clustering of a large-scale collection of multimedia data elements. The method comprises generating a first cluster from the large-scale collection by: matching each multimedia data elements to all other multimedia data elements in the large-scale collection, determining a clustering score for each match being performed, clustering multimedia data elements having a clustering score above a threshold to create the first cluster; and storing the first cluster in a storage. *Continuation of COR-008. Filed as US patent application 13/731,906 on December 31, 2012; Published on June 6, 2013; US patent 8,799,195 issued on August 5, 2014.*	4	A
COR-038 *identified*	"An Apparatus and Methods for Concept Distribution" – *waiting to receive additional information from Igal to address this invention.*		
COR-039 *pending*	"An Apparatus and Methods for Visual Association of Application Icons to Content" – The system analyzed applications, or links to applications installed locally on a user device. The system analyzes the icons representing the applications and generates signatures to the icons. Respective thereto, the system finds similar applications over the web respective of the analysis of the icons and the respective signatures. *Filed as Provisional patent application 61/781,847 on March 14, 2013; converted to a US patent application 14/209,448 on March 13, 2014; published on July 10, 2014.*	3	A
COR-040 *allowed*	"A Method for Determining an Area within an Image over Which an Advertisement Can Be Displayed" – A method for determining an area within multimedia content over which an advertisement can be displayed. The method comprises extracting multimedia content from a web-page requested for display on a user	4	B

	node; generating a signature of each of the multimedia content elements of the multimedia content; searching for at least one advertisement item respective of the signature; determining a display area within the multimedia content over which an advertisement can be displayed; and causing the display of the at least one advertisement item within the display area of the multimedia content. *Filed as Provisional patent application 61/789,378 on March 15, 2013; converted to US patent application 13/874,195 on April 30, 2013; Published on September 19, 2013; Allowed on 9-Nov-2015.*		
COR-041 *Allowed*	"An Apparatus and Methods for Determination of a User's Attention with Respect of a Plurality of Sensory Inputs" – A system for determining a user's attention to a multimedia content displayed over the network. The system comprises one or more sensors that are configured to receive one or more inputs related to the attention of a user. The system is then configured to analyze the multimedia content and the respective one or more inputs and determine the user attention to the multimedia content respective thereto. According to one embodiment, the user attention to multimedia content is stored in a data warehouse and the system is configured to predict the user's attention to similar multimedia content. *Filed as provisional patent application 61/789,460 filed on March 15, 2013; Converted to US patent application 14/013,636 on August 29, 2013; Published on August 29, 2014; allowed on February 23, 2016.*	2	B
COR-042 *pending*	"An Apparatus and Methods for Realtime Bidding Based on Concept Recognition of Audio/Video Inputs" – A method for matching relative content to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; generating	4	A

	characteristics related to the user; determining the concept of the user's impression; searching for relative content respective of the signature; and causing the display of the at least matched content within an appropriate area of the web-page. *Filed as provisional patent application 61/789,510 on March 15, 2013; converted to a US patent application 14/212,213 on March 14, 2013; Published on July 17, 2014*		
COR-043 *identified*	"An Apparatus and Methods for Complementary Actions Based on Concept Recognition of Audio/Video Inputs" – *waiting to receive additional information from Igal to address this invention.*		
COR-044 *identified*	"A Method for Context Extraction from an Audio/Video Signal Based on a Taxonomy of Concepts" – *waiting to receive additional information from Igal to address this invention.*		
COR-045 *Allowed*	"A System and Methods Thereof for Receiving Large Volumes of Unstructured Data and Determining Correlations and Associations Thereto based on Signature Analysis" – A system analyzed unstructured data available through the web and generates signatures respective thereof. The system then identifies one or more common patterns respective of the signatures and store the patterns in a database for further use. *Filed as provisional patent application 61/773,838 on March 7, 2013; Converted to US patent application 13/013,740 on August 29, 2013; Published December 26, 2013; Allowed on October 6, 2016; Issued as US Patent 9,256,668 on 9-Feb-2016.*	4	B
COR-046 *pending*	"A System and Methods Thereof for Determination of Causality Based on Correlation Between Data Objects within Big Data" – The method comprises an analysis of multimedia content and generation of signatures respective thereof; identifying one or more common patterns respective of the signatures; matching the one or more common patterns to one or more available hypothesizes; and determining the causality of the one or more common patterns. *Filed as provisional patent application 61/763,501 on February 12,*	5	A

	2013; filed as US Patent application 14/171,158 on February 3, 2014; Published on June 5, 2014.		
COR-047 *drafting*	"Cortica Synapse Apparatus in Cortex layer" – a continuation-in-part of COR-025. An apparatus enables optimal accuracy while using the signature concepts of previous patents of Cortica by constantly setting one or more thresholds.	5	A
COR-048 *pending*	"A System and Methods Thereof for Creating a Database of User Profiles Based on Multimedia Content" – A system continuously monitors the activity of a user over the web. Upon identification of multimedia content viewed by the user, the multimedia content is analyzed and at least one signature is generated respective thereto. The system is then configured to generate the user's profile respective of the generated signatures. The user's profile is then stored in a data warehouse for further use. *Filed as provisional patent application 61/766,016 on February 19, 2013; converted to US patent application 13/856,201 on April 3, 2013.*	4	A
COR-049 *pending*	"An Apparatus and Methods Thereof for Verifying Users Identity Based on Multimedia Content Elements" – A system for verification of user identification while trying to unlock a device. The system is configured to receive multimedia identification parameters related to a user while attempting to unlock the device. The system then generates signatures respective of the multimedia identification parameters. If the user's identification is verified, the system unlocks the device. If the user identification is not verified an alert is generated of an unauthorized attempt to unlock the device. *Filed as US patent application 14/043,230 on October 1, 2013; Published on January 30, 2014.*	3	A
COR-050 *pending*	"A System and Methods Thereof for Visual Analysis of an On-Image Gestures" – a continuation-in-part of COR-027 that shows the ability to identify a plurality of on-image gestures received by a user. An on-image	4	A

	gesture is received by the user and identified by the system. A signature is generated for at least the portion of the image over which the gesture was identified. At least a link to an information resource is associated to the portion of image and provided to the user respective thereto. *Filed as provisional patent application 61/763,505 on February 12, 2013; filed as US Patent application 14/168,811 on January 30, 2014; Published on January 30, 2014.*		
COR-051 *pending*	"Image Based Filters" – A method and system for generating contextual filters for editing multimedia content elements. The method comprises receiving a uniform resource locator (URL) of the web-page; downloading the web-page respective of the received URL; analyzing the web-page to identify the existence of each of the plurality of multimedia content elements; generating at least one signature for each of the plurality of multimedia content elements, wherein each of the generated signatures represents a concept; and generating one or more contextual filters for editing the multimedia content elements shown in the web-page. *Filed as provisional patent application 61/773,349 on March 6, 2013; filed as US patent application 14/198,178 on March 5, 2014; Published on July 3, 2014.*		
COR-052 *pending*	"A System and Methods for In Context Conversion Of an Input Signal In a First Natural Language to Another Natural Language" – continuation-in-part of COR-005 adding various components to the system and showing how together they enable receiving an input in a first natural language and sending a contextually matched input in a second natural language. *Filed as provisional patent application 61/833,933 on June 12, 2013; converted to US patent application 14/302,495 on June 12, 2014; Published on October 2, 2014.*	3	A
COR-053 *Allowed*	"A System and Methods for Capturing Multimedia Content Item by a Mobile Device for Subsequently Matching Relevant Content to the Multimedia Content Item" –A method for	4	A

	capturing multimedia content item and matching relevant content respective thereto. The method comprises, receiving at least one multimedia content item captured by a mobile device operated by a user; generating a signature for the at least one captured multimedia content item; matching at least one relevant content item respective of the generated signature; and providing the at least one relevant content item respective of the signature of the at least one captured multimedia content element to the mobile device. *Filed as provisional patent application 61/766,703 on February 20, 2013; filed as US Patent application 14/167,388 on January 29, 2014; Published on June 29, 2014; Allowed on 13-Jan-2016.*		
COR-054 *pending*	"A System and Methods for Creating a Database of Multimedia Content Elements Assigned to Users" – A system and methods for creating a database of multimedia content elements assigned to users. The system receives at least one multimedia content element and one or more parameters related to a user from a user device. The system then generates a signature of the at least one multimedia content element and searches for the existence of the multimedia content element in a database using the signature. A unique identifier is then generated to every non-existing multimedia content element respective of its signature and the one or more parameters related to the user. According to one embodiment, the multimedia content element is then stored in the database for further use. *Filed as provisional patent application 61/773,356 on March 6, 2013; filed as US patent application 14/198,154 on March 5, 2014; Published on July 3, 2014.*	5	B
COR-055 *pending*	"A System and Method for Generation of Taxonomies Based on Concepts" – A system for generating taxonomies respective of a plurality of signatures generated from one or more multimedia data elements (MMDEs). The system comprises a signature generator (SG) for generating at least a signature responsive to	2	A

	one or more MMDEs; a clustering processor (CP) for clustering a plurality of signatures received from the signature generator responsive of the plurality of MMDEs, and for determining a match between the one or more MMDEs respective of the signatures; and a concept generator (CG) for associating metadata between the matched MMDEs and generating the MMDEs taxonomy. *Filed as provisional patent application 61/773,356 on March 26, 2013; filed as US patent application 14/224,923 on March 25, 2014; Published on July 24, 2014.*		
COR-056 *pending*	"A System and Method for Receiving On-image Gestures as Search Queries" – A method and system for searching a plurality of information sources using an on-image gesture over a multimedia element. The method comprises receiving at least one on-image gesture over a multimedia element; generating at least one signature for the at least one multimedia element; generating a textual search query using at least the one generated signature and the on-image gesture; searching the plurality of information sources using the generated textual search query; and causing the display of search results retrieved from the plurality of information sources on a user device. *Filed as provisional patent application 61/775,958 on March 11, 2013; filed as US patent application 14/203,047 on March 10, 2014; Published on July 10, 2014.*	4	B
COR-057 *identified*	"On-line Cortex Generation" – a continuation-in-part of COR-025. An apparatus enables on-line generation of the cortex as described in COR-025.	4	A
COR-058 *prov.*	"A System and Methods thereof for Dynamically Matching an Advertisement to Multimedia Content" – A method for matching an advertisement item to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; extracting one or	3	A

	more parameters related to the user; searching for at least one advertisement item respective of the signature and the parameters related to the user; and causing the display of the at least one appropriate advertisement item within a display area of the web-page. Filed as provisional patent application 61/779,010 on March 13, 2013.		
COR-059 *identified*	"Evolving Cortex" – a continuation-in-part of COR-025. An apparatus enables the evolvement of the cortex respective of additional signatures collected.	4	A
COR-060 *identified*	"Spiral Cortex Generation" – a continuation-in-part of COR-025. An apparatus enables spiral generation of the cortex.	5	A
COR-061 *identified*	"Context Identification by Using Multiple Cortices" – *waiting to receive additional information from Igal to address this invention.*		
COR-062 *pending*	"A System and Methods Thereof for Visual Analysis of an Image on Web-page and Determination of a Correlation Between the Image and a Plurality of Key Words" – A method for matching a multimedia content element to a plurality of keywords. The method comprises receiving at least one multimedia content element; generating a signature of the at least one multimedia content element; determining the context of the multimedia content element; searching for at least one keyword respective of the context; and providing at least one key word and a quality score respective of the context. *Filed as provisional patent application 61/818,579 on March 13, 2013; converted to US patent application 14/267,990 on May 2, 2014; Published on September 9, 2014.*	3	A
COR-063 *identified*	"A System and Methods for Generation of Co-evolutionary Cortex" – *waiting to receive additional information from Igal to address this invention.*	3	A
COR-064 *identified*	"A System and Methods Thereof for Module Based Identification of Multimedia Elements" – A system and methods thereof for model based identification of multimedia elements.	3	B

	The method comprises receiving from a user device at least one multimedia content; extracting at least one multimedia element from the multimedia content; generating by a signature generator system (SGS) communicatively connected to the network at least one signature for each multimedia element; correlating the generated signature(s) to at least one model maintained in a data warehouse, each model comprises a plurality of previously generated signature; and updating at least one model upon determination of a correlation above a predetermined threshold between the generated signature(s) and the respective model.		
COR-065 *pending*	"A method for Providing Recommendations on Media Content" – A method and system for profiling interests of users based on multimedia content analysis and providing recommendations respective thereof is provided. The method comprises receiving a tracking information gathered with respect to an interaction of a user with at least one multimedia element displayed on a user node; determining a user impression respective of at least one multimedia content element using the received tracking information; generating at least one signature for the at least one multimedia element; determining at least a concept of the at least one multimedia element using the at least one generated signature, wherein an interest of the user is determined respective of the concept; creating a user profile to include at least the user interest; and providing recommendations to the user based on at least one of: the at least one signature for the at least one multimedia element, the user profile. *Filed as provisional patent application 61/833,028 on June 10, 2013; converted to US patent application 14/280,928 on May 19, 2014; Published on September 9, 2014.*	4	A
COR-066 *pending*	"A Method for Identifying Image Global Orientation and Scale" – a method comprising: receiving at least one multimedia content element from a user device; analyzing the at	2	A

	least one multimedia content element; generating at least one signatures respective of the analysis; and determination at least one scaling indicator for the image respective of the at least one signature. *Filed as US patent application 14/608,880 on 26-Jan-2015.*		
COR-067 *pending*	"A System and Methods for Identifying Clinical Indicators" – A method and system for generating user identifiers and searching for possible diagnoses respective thereof. The method comprises receiving at least one multimedia content element from a user device; generating at least one signature for the at least one multimedia content element; generating at least one identifier related to the user; searching for possible diagnoses through a plurality of data sources; and providing the possible diagnoses to the user device. *Filed as provisional patent application 61/839,871 on June 27, 2013; converted to US patent application 14/314,567 on June 25, 2014; Published on October 16, 2014.*	4	B
COR-068 *identified*	"A System and Method for Speech to Text Translation Using Cores of a Natural Liquid Architecture System" – a continuation-in-part of COR-005 that shows a method for speech to text translation using the NLA system.	4	B
COR-069 *pending*	"A System and Methods for Automatic Removal of Blacklisted Concept" – A system and methods thereof for identifying a multimedia content element contains at least one inappropriate concept. The method comprises an analysis of the multimedia content element and generation of signatures respective thereof. Each of the signatures generated represents a concept needed to be tested. The analysis include correlating the signatures generated respective of the multimedia content element and at least one signature of the at least one inappropriate concept. The system is configured to determine whether a match is identified, thereby preventing from the multimedia content element to be displayed. According to one embodiment, an inappropriate concept is	4	B

	determined respective of a user's characteristics. According to another embodiment, an inappropriate concept is retrieved from a data warehouse together with at least one signature respective thereto. *Filed as provisional patent application 61/839,885 on June 27, 2013; converted to US patent application 14/314,579 on June 25, 2014.*		
COR-070 *pending*	"A System and Methods for Enhancing Users Navigation Experience Through Sources of Multimedia Content" – A method for tagging multimedia content elements is provided. The method comprises receiving at least one multimedia content element from a user device; generating at least one signature for the at least one multimedia content element; generating at least one tag based on the least one generated signature, wherein the at least one tag is searchable by the user device; and sending the tag generated for the received multimedia content element to storage on the user device. *Filed as provisional patent application 61/860,261 on July 31, 2013; converted to US patent application 14/050,991 on October 10, 2013; published on February 6, 2014.*	5	A
COR-071 *identified*	"A System and Methods for Compression of Unordered Sets" – A system shows the ability of efficiently compress and store unordered sets of data.	3	A
COR-072 *identified*	"Metaphor Based Descriptors" – A system and method for identification of multimedia content elements based on metaphoric similarity to already known multimedia content elements.	2	A
COR-073 *pending*	"A System for Identification of Deviations from Common Patterns In Multimedia Content" – A system identifies deviation from common patterns within multimedia content. The system continuously receives multimedia content. The system analyzes the multimedia content and generates at least one signature respective of each segment in the multimedia content. The system then detects at least one periodic behavior within the multimedia content based on the signatures. Upon identification of at least one deviation from the	5	A

	identified at least one periodic behavior, the system generates a notification. *Filed as provisional patent application 61/889,542 on October 11, 2013; converted to US patent application 14/509,543 on October 8, 2014.*		
COR-074 *pending*	"A Method for Deep Content Identification of Food Substances" – A method for identifying nutritional data related to food substances contained in a multimedia content item is provided. The method includes analyzing a received multimedia content item to identify multimedia elements containing food substance; generating at least one signature for each identified multimedia element; querying a deep-content-classification (DCC) system for each of the identified multimedia elements to find at least one concept that matches at least one of the identified multimedia elements; matching the at least one signature of each of the at least one matching concepts to previously generated signatures of food substances maintained in a data warehouse; retrieving, for each of the at least one matching signature, nutritional data associated with the at least one matching signature from the data warehouse, thereby providing nutritional data for the food substances substance contained in the received multimedia content item; and sending the nutritional data to the user device. *Filed as provisional patent application 61/890,251 on October 13, 2013; converted to US patent application 14/095,865 on December 4, 2013; Published on April 3, 2014.*	4	B
COR-075 *pending*	"A System and Methods for Multimedia content Sharing" – A system for sharing multimedia content exists on a plurality of user devices. The system receives one or more multimedia content elements from a first user device. The system analyzes the multimedia content elements and generates one or more signatures respective thereto. The system then generates one or more tags based on the signatures and assigns the tags to their respective multimedia content elements. The system then stores the multimedia content	4	A

	elements together with the tags in a data storage unit accessible by a plurality of user devices. Upon receiving a query from at least a second user device, the system searches through the data storage unit for tags related to the user's query and provide the matching multimedia content elements to the user of the user device. *Filed as provisional patent application 61/884,081 on September 23, 2013; converted to a US patent application 14/449,957 on September 29, 2014.*		
COR-076 *pending*	"A Method for Identification of Multimedia Content Elements Based on Signatures and Environmental Variables" – A method and system for determining a context of a multimedia content element. The method comprises receiving at least a multimedia content element from a user device; generating at least one signature for the at least one multimedia content element, wherein each of the generated signatures represents a concept; determining at least a first contextual parameter respective of the at least one signature; receiving at least one environmental variable related to the at least one multimedia content element; determining at least a second contextual parameter respective of the at least one environmental variable; and determining the context of the at least one multimedia content element respective of at least the first contextual parameter and at least the second contextual parameter. *Filed as provisional patent application 61/889,545 on October 11, 2013; converted to US patent application 14/509,552 on October 8, 2014.*	5	A
COR-077 *pending*	"A Methods for Identification of 3D multimedia Content" – A method for analyzing a three-dimensional multimedia data elements, comprising :receiving at least one three-dimensional multimedia data element; partitioning the at least one three-dimensional multimedia data element to a first two-dimensional multimedia data element and a second two-dimensional multimedia data element; generating a signature for each of the	3	A

	two-dimensional multimedia data elements assembling at least a complex signature comprising the signatures generated for each of the two-dimensional multimedia data elements; and storing the signatures of each of the two-dimensional multimedia data elements and the complex signature in association with the three-dimensional multimedia data element in a storage unit. *Filed as provisional patent application 61/939,287 on February 17, 2014. Filed as US patent application 14/621,643 on 11-Jan-2015.*		
COR-078 *pending*	"A System and Method for Concepts Caching Using a Deep-content-classification (DCC) System" – A method for caching concept structures in a cache memory of a computing device. The method comprising collecting metadata related to the user of the computing device responsive of use of the computing device by the user; fetching from at least a data warehouse communicatively connected to the computing device via a network one or more concept structures respective of the received metadata, wherein each concept structure comprises a plurality of metadata associated with one or more multimedia content elements; and, storing the one or more concept structures in the cache memory, such that responsive to a request to analyze at least one multimedia content element, metadata is generated by the computing device respective of the at least one multimedia content element and matched by the computing device to the one or more concept structures stored in the cache memory. *Filed as provisional patent application 61/889,224 on November 3, 2013; converted to US patent application 14/530,918.*	3	A
COR-079 *pending*	"A System and Method for Identifying a Target Object In a Multimedia Content Element Based On The Context of The Multimedia Content Element" – A method and system thereof for identifying a target area in content collected by a computing device. The method comprises receiving at least one multimedia content element from the computing device;	4	A

	partitioning the multimedia content element into a number of partitions wherein, each partition having at least one object therein; generating at least one signature for each partition of the multimedia content element wherein, each of the generated signatures represents a concept; correlating the concepts respective of the generated signatures to one or more concepts exist in a data warehouse to determine the context of the multimedia content element; and identifying at least one partition of the multimedia content as a target area respective of the context of the multimedia content element. *Filed as provisional patent application 61,899,225 on November 3, 2013; Converted to US patent application 14/530,913 on November 3, 2014.*		
COR-080 *pending*	"A System and Methods thereto for Analyzing Multimedia Content elements and Ranking the Multimedia Content Elements Respective of the Analysis" – A method for providing one or more multimedia content elements respective of a query received from a user device. The method comprising: generating at least one signature for each multimedia content element stored in a data storage; generating at least one tag respective of the at least one generated signature, wherein the tag comprises one or more words; receiving at least one query from a user device; and generating a matching score for each multimedia content element respective of a match level between the at least one query and the at least one tag; and providing at least one multimedia content element to the user device respective of a matching score above a predetermined threshold value. *Filed as provisional patent application 61/899,226 on November 3, 2013; converted to US patent application 14/530,922 on November 3, 2014.*	4	B
COR-081 *pending*	"A System for Determination of User Attention Based on Pupil Response Clustering" – a system identifies multimedia content viewed by a user on a user device. The system collects images of the user's pupil. The system identifies pupil responses responsive of the	3	B

	multimedia content. The system then determines the user's attention to the multimedia content respective of the pupil responses. *Filed as provisional patent application 61/939,289 on February 13, 2014. Filed as US patent application 14/621,653 on 11-Jun-2015.*		
COR-082 *pending*	"A System and Methods Thereof for Visual Analysis of Multimedia Content Elements and Matching Content to The Multimedia Content Elements Respective of the Analysis" – A method for searching for content items that relate to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; receiving at least one personal variable related to the user of the use node; searching for at least one advertisement item respective of the signature and the at least one personal variable related to the user of the user node; and causing the display of the at least one advertisement item within a display area of the web-page. *Filed as provisional patent application 61/928,461 on January 17, 2014; converted to US patent application 14/596,605 on January 14, 2015.*	3	B
COR-083 *pending*	"A Method for Tracking User Activities Respective of a Recipe and Multimedia Segments Captured by a User Device" – A system identifies deviation from a plurality of instructions and a plurality of ingredients specified in a recipe received as an input based on an analysis of multimedia content. The system generates a multimedia sequence of segments respective of the recipe. Then, the system generates a sequence of expected signatures respective of the multimedia sequence of segments. A sequence of multimedia segments is continuously received from the user device. At least one signature is generated by the system for each multimedia segment of the sequence of multimedia segments. The system then matches the	4	A

	signature generated for each multimedia segment of the sequence of multimedia segments to the expected sequence of signatures of the recipe and provides a notification to the user device upon identification of a deviation from the recipe. *Filed as provisional patent application 61/928,467 on January 17, 2014; converted to US patent application 14/596,553 on January 14, 2015.*		
COR-084 *pending*	"A Computing Device, a System and a Method for Parallel Processing of Data Streams" – a continuation application of COR-003. *Filed as US patent application 14/175,569 on February 6, 2014.*	4	A
COR-085 *pending*	"A System and Methods thereto for Analyzing Multimedia Content elements and Ranking the Multimedia Content Elements Respective of the Analysis" – A method and system for generating an advertisement effectiveness performance score for multimedia content elements displayed in a web-page. The method comprises receiving a uniform resource locator (URL) of the web-page; downloading the web-page respective of the received URL; analyzing the web-page to identify the existence of each of the plurality of multimedia content elements; generating at least one signature for each of the plurality of multimedia content elements, wherein each of the generated signatures represents a concept; determining a context of each multimedia content element; determining a context of the web-page respective of the context of each of the multimedia content elements; receiving data respective of the advertisement effectiveness of each of the plurality of multimedia content elements; generating an advertisement effectiveness performance score for each of the multimedia content elements respective of the context of the web-page and the advertisement effectiveness data respective of each of the plurality of multimedia content elements; and storing each of the multimedia content elements together with its respective	4	A

	advertisement effectiveness performance score in a data warehouse; *Filed as provisional patent application 61/939,290 on February 13, 2014. Filed as US patent application 14/621,661 on 11-Jun-2015.*		
COR-086 *pending*	"A System for Customizing Multimedia Content of Web Pages" – A method for customizing multimedia data elements (MMDEs) of a web-page respective of users' characteristics. The method comprises receiving a request to display a web-page that includes a plurality of MMDEs from a user device; generating at least one signature for each of the plurality of MMDEs; determine at least one concept structure having associated MMDE and metadata based on the generated signatures. receiving one or more user characteristics related to the user of the user device; determining based on the identified one or more characteristics at least an alternate MMDE to replace one of the plurality of MMDEs, responsive of the one or more characteristics, the signatures and the metadata; and sending one or more MMDEs associated with the one or more concept structures for display in the web-page on the user device. *Filed as provisional patent application 61/928,468 on January 17, 2014; converted to US patent application 14/597,324 on January 17, 2014.*	3	A
COR-087 *identified*	"A Method for identification of The Energy Center of Multimedia Elements" - *waiting to receive additional information from Igal to address this invention.*	?	?
COR-088 *pending*	"A System and Methods for Assigning Virtual Content to Natural Content Exists in the Real World" – A continuation-in-part of COR-054 that enables users to add virtual content, such as posts and other visual or informative content to natural content exists in the real world. A user that adds content may further determines the privacy definition of such content. For example, a user can determine that only certain users will be able to view the virtual content; *Filed as provisional patent application*	4	A

	61/931,919 on January 27, 2014. Filed as US patent application 14/606,546 on 27-Jan-2015.		
COR-089 *pending*	"A System and Method for Detecting an Incorrect Orientation of a Multimedia Content Item" – A method for detecting an incorrect orientation of a multimedia content item is provided. The method includes receiving the multimedia content item from a user device; generating by a signature generator system (SGS) at least one signature for each object shown in the multimedia content item; querying a deep-content-classification (DCC) system to find at least one concept that matches at least one object, wherein the querying of the DCC system is performed using the signatures generated for the objects; determining the correct orientation of the at least one concept respective of information maintained in a data warehouse; determining whether the orientation of the at least one object shown in the multimedia content item is the correct orientation, and therefore determining that the orientation of the multimedia content item is correct. According to an embodiment, the multimedia content item is rotated upon identification of incorrect multimedia content item. *Filed as provisional patent application 62/030,086 on July 29, 2014. Filed as US patent application 14,638,176 on 4-Mar-2015.*	3	B
COR-090 *identified*	"A System and Methods Thereof for Big Data Compression" – TBD	?	?
COR-091 Place holder			
COR-092 *pending*	"A System and Method For Concepts Caching Using a Deep-Content-Classification (DCC) System" – A method for caching concept structures in a cache memory of a computing device. The method comprising collecting environmental variables related to the user of the computing device; fetching from at least a data warehouse communicatively connected to the computing device via a network one or more concept structures respective of the received environmental variables, wherein each concept structure comprises a plurality of	2	A

	metadata associated with one or more multimedia content elements; and, storing the one or more concept structures in the cache memory, such that responsive to a request to analyze at least one multimedia content element, metadata is generated by the computing device respective of the at least one multimedia content element and matched by the computing device to the one or more concept structures stored in the cache memory. *Filed as provisional patent application 61/986,245 on April 30, 2014. Filed as US patent application 14/700,801 on 30-Apr-2015.*		
COR-093 *pending*	"A Method For Identification of a Clothing Artifact" – A method for identifying metadata related to clothing artifacts contained in a multimedia content item is provided. The method includes analyzing a received multimedia content item to identify multimedia elements containing clothing artifacts; generating at least one signature for each identified multimedia element; querying a deep-content-classification (DCC) system for each of the identified multimedia elements to find at least one concept that matches at least one of the identified multimedia elements; matching the at least one signature of each of the at least one matching concepts to previously generated signatures of clothing artifacts maintained in a data warehouse; retrieving, for each of the at least one matching signature, nutritional data associated with the at least one matching signature from the data warehouse, thereby providing metadata for the clothing artifacts contained in the received multimedia content item; and sending the metadata to the user device. *Filed as provisional patent application 62/042,979 on August 28, 2014. Filed as US patent application 14/836,249 on 26-Aug-2015.*	3	A
COR-094 *pending*	"A Method For Recognition of Characters in Multimedia Content" – A method for recognition of natural language characters embedded in multimedia content. The method comprising: receiving the multimedia content;	3	B

	extracting at least an image of at least a character from the multimedia content; identifying at least a natural language character corresponding to the image of at least a character by a deep content classification (DCC) system; and storing the at least a natural language character in memory. *Filed as provisional patent application 61/948,050 on March 5, 2014. Filed as US patent application 14/638,210 on 4-Mar-2015.*		
COR-095 *pending*	"A Method For Linking Multimedia Data Elements to Web Pages" – A method and system for linking a multimedia data element (MMDE) and a webpage are provided. The method includes receiving a MMDE from a source; generating a signature representative of the MMDE using a plurality of computational cores; matching the generated signature with a plurality of signatures stored in a database to find at least one matching signature, wherein at least one of the stored signatures has at least one corresponding universal resource locator (URL) of a web page stored therein as metadata of the at least one of the stored signatures; and providing to the source at least a URL that is a metadata of a matched signature upon determination of a match between the generated signature and at least one of the plurality of signatures stored in the database. *Filed as US patent application 14/321,231 on July 1, 2014.*	3	A
COR-096 *issued*	"A System and Method For Signature-Based Unsupervised Clustering of Data Elements" – A method and system for signature-based unsupervised clustering of data elements. The method comprises receiving a plurality of clusters; generating a triangular matrix respective of the clusters; generating a signature for each of the clusters; generating a match score between each of two different clusters; storing the match score in a cell of the triangular matrix corresponding to the two clusters; determining whether any of the match scores is above a predefined threshold value; clustering every two clusters that are determined to have a score above a	4	A

	predetermined threshold; and repeating the generation of a triangular matrix respective of the clusters until a single cluster is reached. The system comprises an interface; a processor; a memory for storing at least one cluster; and a memory coupled to the processor, the memory containing instructions that, when executed by the processor, configure the system to perform the steps of the method. *Filed as US patent application 14/334,903 on July 18, 2014. Issued as 9,104,777 on 11-Aug-2015.*		
COR-097 *issued*	"A Method For Unsupervised Clustering of Multimedia Data Using Large Scale Matching System" – A method and system for unsupervised clustering of multimedia content are provided. The method includes generating a plurality of clusters, each cluster containing at least a data element; generating for each of the plurality of clusters a corresponding signature; matching each of the signatures to all other signatures; determining a clustering score for each match; clustering multimedia data elements of each pair of clusters of the plurality of clusters that are determined to have a clustering score above a threshold value to create at least a first cluster; and storing the at least a first cluster in a storage unit. *Filed as US patent application 14/334,908 on July 18, 2014; allowed on December 12, 2014 as 9,009,086.*	4	A
COR-098 *pending*	"A System for Providing Multimedia Content Elements to Users Based on Textual Phrases" – A method and system for searching a plurality of information sources using a multimedia element. The method comprises receiving at least one multimedia element; generating at least one signature for the at least one multimedia element; generating a textual search query using at least the one generated signature; searching the plurality of information sources using the generated textual search query; and causing the display of search results retrieved from the plurality of information sources on a user device. *Filed as provisional patent application 62/030,075 on July 29,*	3	A

	2014. Filed as US patent application 14/811,195 on 28-Jul-2015.		
COR-099 *pending*	"A System for Providing Content Items to Users Respective of Products" – A method and system for providing customized content to users are provided. The system comprises receiving at least multimedia content element from a user device; identifying at least one identifier related to the user device; generating at least one signature for the at least one multimedia content element; determining at least one concept respective of the at least one signature; searching through a database for one or more content items in associated with the at least one identifier and the at least one concept; and providing the one or more content items to the user device. *Filed as provisional patent application 62/030,076 on July 29, 2014. Filed as US patent application 14/811,201 on 28-Jul-2015.*	3	B
COR-100 Place holder			
COR-101 *pending*	"A Method for Adding Advertising Content to Multimedia Content Elements" – A method and system for adding advertising content to multimedia content elements. The method comprising: receiving by a server a request from a user device to identify a multimedia content element, the request including the multimedia content; generating by a the server at least one signature respective of the multimedia content element; determining by the server at least one identifier associated with the multimedia content element respective of the signature; checking by the server a database accessible by the server whether there is at least one advertising content item associated with the at least one identifier; and sending by the server the at least one advertising content item together with the at least one identifier upon determination that the at least one advertising content item is associated with the at least one identifier. *Filed as provisional patent application 62/030,077 on July 29, 2014. Filed as US patent application 14/811,209 on 28-Jul-*	4	A

	2015.		
COR-102 *pending*	"A System and Methods Thereof for Identifying Trends in Data Sources" – A method and system for identifying trends in data sources. The system crawls through a plurality of data sources and collects multimedia content therefrom. The system then extracts visual elements from the multimedia content. Respective of each visual element, the system generates a signature. The system further collects environmental variables in association with the visual elements. The system continuously tracks correlations between the environmental variables and the generated signatures. Upon determination of a correlation above a certain threshold between a signature and an environmental variable, the system determines trends respective thereof. *Filed as provisional patent application 62/030,079 on July 29, 2014. Filed as US patent application 14/811,219 on 29-Jul-2015.*	4	A
COR-107 *pending*	"A System and Methods Thereof for Embedding a Code in Multimedia Content Elements" – A method and system for adding at least one code to a multimedia content item. The method comprising receiving a request to add at least one code to a multimedia content item from a user device; identifying each of the elements of the multimedia content elements; generating a new multimedia content element that includes the at least one code respective of at least the identification of each of the multimedia content elements; and adding the newly generated multimedia content element to the multimedia content item. *Filed as provisional patent application 62/042,789 on August 28, 2014. Filed as US patent application 14/836,254 on 26-Aug-2015.*	5	B
COR-108 *drafting*	"A System and Methods For Picture obphuscation".	5	B
COR-109 *drafting*	"A Multi-Layer System for Signature Based Compression of Patterns" – A continuation-in-part of COR-025 adding a temporal dimension to the cortex generation.	3	A

COR-110 *drafting*	"A Multi-Layer System for Signature Based Compression of Patterns" – A continuation-in-part of COR-025 adding a feature selection by Cortex	3	A
COR-111 *pending*	"Systems and Methods For Generation of Searchable Structures Respective of Multimedia Data Content" – A method for creating a multimedia data search engine platform to allow fast search of multimedia content data elements (MMDEs). The method comprises collecting MMDEs from at least an external source storing MMDEs; generating a plurality of signatures for each of the collected MMDEs; generating signature reduced clusters (SRCs) for the collected MMDEs by clustering the plurality of signatures generated for each of the collected MMDEs; and generating concept structures from the generated SRCs, wherein the concept structures generated for different SRCs are utilized to compare between different MMDEs, thereby searching for an input MMDE that matches the collected MMDEs. *Filed as US patent application 14/509,588 on October 8, 2014.*	3	B
COR-112 *pending*	"A System and Method For Providing Content To a User Device Respective of Multimedia Content Elements" – A method and system for providing metadata associated with a multimedia content element to a web browser. The system receives at least one multimedia content element from a user device. The system further receives at least one query from a user device. The query may be a user's gesture or a textual query. The system then generates at least one signature respective of the at least one multimedia content element. The system then extracts from a database metadata associated with the at least one multimedia content element respective of the at least one signature and the at least one query. Then, the system provides the metadata to the user device. *Filed as provisional patent application 62/030,079 on July 29, 2014. Filed as US patent application 14/811,227 on 28-Jul-2015.*	3	B
COR-113	"A System and Methods for Generation of	3	B

pending	Complex Signatures for Multimedia Data Content" – A continuation application of COR-030. *Filed as US patent application 14/530,970 on November 3, 2014.*		
COR-114 *pending*	"A System and Method For Generation of Signatures for Multimedia Data Elements" – A system for generating signatures of an input multimedia data element comprises a partitioning unit for recursively partitioning the input multimedia data element into a plurality of multimedia data elements, wherein each of the plurality of the minimum size multimedia data elements is a minimal partition of the input multimedia data elements; a signature generator for generating for each of the plurality of minimum size multimedia data elements a respective signature; and a storage unit for storing the respective signatures respective of the plurality of minimum size multimedia data elements. *Continuation of COR-034. Filed as provisional patent application 62/030,079 on July 29, 2014.*	3	B
COR-115 *Allowed*	"A System and Method For Generation of Signatures for Multimedia Data Elements" – A continuation of COR-025; *Filed as US patent application 14/573,652 on December 17, 2014. Allowed on 22-Jul-2015.*	4	A
COR-116 *Allowed*	"A System and Method For Generation of Signatures for Multimedia Data Elements" – A continuation of COR-028. *Filed as US patent application 14/620,863 on 4-Jun-2015; Allowed on October 21, 2015.*	2	A
COR-117 *pending*	"A System and Methods for Generation of a Concept Based Database" – A system for generating concept based database respective of a plurality of multimedia data elements (MMDEs). The system comprises an attention processor (AP) for generating a plurality of items from a received MMDE of the plurality of MMDEs and determining which of the generated items that are of interest for signature generation; a signature generator (SG) for generating at least a signature responsive to at least an item of interest of the received MMDE of the plurality of MMDEs; a clustering	3	A

	processor (CP) for clustering a plurality of signatures received from the signature generator responsive of the plurality of MMDEs, and for creating a signature reduced cluster (SRC) of the cluster; a concept generator (CG) for associating metadata with the SRC and matches the SRC with previously generated SRC such that SRCs that match form a concept structure comprised of a plurality of SRCs and their associated metadata; and, an index generator (IG) for generating a plurality of compressed conceptual representations for each of the plurality of MMDEs stored in database. *Filed as US patent application 14/643,694 on 2-Jul-2015.*		
COR-118 *pending*	"Signature Generation for Multimedia Deep-Content-Classification by a Large-Scale Matching System and Method Thereof" – Content-based clustering, recognition, classification and search of high volumes of multimedia data in real-time. The embodiments disclosed herein are dedicated to real-time fast generation of signatures to high-volume of multimedia content-segments, based on relevant audio and visual signals, and to scalable matching of signatures of high-volume database of content-segments' signatures. The embodiments disclosed herein can be implemented in any applications which involve large-scale content-based clustering, recognition and classification of multimedia data, such as, content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, object recognition, video search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. *Continuation of COR-035. Filed as US patent application 13/682,132 on February 11, 2015; Published on June 4, 2015.*	3	A
COR-119 *identified*	"A System and Methods for In Context Translation from One Natural Language to Another Natural Language" – A system is	3	A

	configured to receive a word within a sentence as well as the sentence itself and match words and phrases of the sentence to multimedia content. Respective thereto the system is configured to match multimedia content having metadata in one natural language to multimedia data having metadata in another natural language. Based on the matching the system is configured to determine the appropriate translation in-context. *Continuation application of COR-018.*		
COR-120 *Prov.*	"System and Methods for Identification of Key Points In Multimedia Data Elements" – A system and methods for identification of key points in a multimedia data element. The key points in the multimedia data element enable identification of multimedia content elements shown in the multimedia data element using computer vision systems. The system analyzes the multimedia data element starting from the edges of the multimedia data element to identify a plurality of candidate key points. The system then analyzes the plurality of candidate key points to determine a set of properties for each of the plurality of candidate key points. Respective of the set of properties of each of the plurality of candidate key points, the system selects a plurality of key points. *Filed as a Provisional Patent Application 62/267,398 on 15-Dec-2015.*	4	A
COR-121 *identified*	"System and Methods for Identification of Key Points In Multimedia Data Elements" – A system and methods for identification of key points in a multimedia data element. The key points in the multimedia data element enable identification of multimedia content elements shown in the multimedia data element using computer vision systems. The system analyzes the multimedia data element starting from the edges of the multimedia data element to identify a plurality of candidate key points. The system then analyzes the plurality of candidate key points to determine a set of properties for each of the plurality of candidate key points. Respective of the set of properties of each of	4	A

	the plurality of candidate key points, the system selects a plurality of key points.		
COR-122 *pending*	"A System and Method For Symbol-Space Based Compression of Patterns" – A method and system for symbol-space based pattern compression is provided. The method includes identifying a plurality of combinations of symbols in an input sequence, each identified combination of symbols appearing in the input sequence above a predefined threshold, the input sequence having a first length; generating an output sequence having a second length by replacing each identified combination of symbols with a unique symbol, wherein each unique symbol is not a previously used symbol, wherein the second length is shorter than the first length; and storing the output sequence as a data layer. *Filed as US Patent Application 14/929,976 on 2-Nov-2015.*	4	B
COR-123 *pending*	"A System and Methods thereof for Visual Analysis of an Image on a Web Page and Matching an Advertisement Thereto" – A method for matching an advertisement item to a multimedia content element. The method comprises extracting at least one multimedia content element from a web-page requested for display on a user node; generating a signature of the at least one multimedia content element; searching for at least one advertisement item respective of the signature; and causing the display of the at least one advertisement item within a display area of the web-page. *Filed as US Patent Application 14/856,981 on 17-Sep-2015.*	3	A
COR-124 *pending*	"A System and Method thereof for Brands Monitoring and Trends Analysis based on Deep-Content-Classification" – A system analyzes trends respective of brands' monitoring over the web. A method begins when a server receive a request to monitor a brand. In one embodiment, the server is configured to generate one or more signatures respective of the brand. The sever crawls through one or more web sources to identify multimedia content. Further, the server	2	A

	identifies existence of the brand within the multimedia content. The server analyzes the behavior of the brand within the multimedia content for the purpose of comparing the brand's behavior to previously identified behavior of the brand. The system contains a database that maintains the previously identified behaviors. The server is configured to identify changes in the brand's behavior respective thereof. *Filed as US Patent Application 14/955,788 on 1-Dec-2015.*		
COR-125 *pending*	"A System and Methods Thereof for Dynamically Associating a Link to an Information Resource With a Multimedia Content Displayed In a Web-page" – A method for associating at least a link to an information resource with a multimedia content element. The method comprises identifying at least one multimedia content element in a web-page, wherein a uniform resource locator (URL) of the web-page is received from any one of a user device and a web server hosting the web-page; generating a signature for at least a portion of the at least one identified multimedia content element; determining at least a link to the at least a portion of the content respective of the generated signature; and providing the web-page with the at least a link respective of the signature of the at least a portion of the at least one multimedia content element to the user device. *Filed as US Patent Application 14/962,532 on 8-Dec-2015.*	2	A
COR-126 *pending*	"A System and Methods Thereof for Receiving Large Volumes of Unstructured Data and Determining Correlations and Association Thereto based on Signature Analysis" – A system analyzed unstructured data available through the web and generates signatures respective thereof. The system then identifies one or more common patterns respective of the signatures and store the patterns in a database for further use. *Filed as US Patent Application 14/994,435 on 13-Jan-2016.*	3	B
COR-127 *pending*	"A Method for Determining an Area within an Image over Which an Advertisement Can Be	4	B

	Displayed" – A method for determining an area within multimedia content over which an advertisement can be displayed. The method comprises extracting multimedia content from a web-page requested for display on a user node; generating a signature of each of the multimedia content elements of the multimedia content; searching for at least one advertisement item respective of the signature; determining a display area within the multimedia content over which an advertisement can be displayed; and causing the display of the at least one advertisement item within the display area of the multimedia content. *Filed as US Patent Application 15/019,223 on 9-Feb-2016.*		
COR-128 *Prov.*	"A Method for Determining a Contextual Insight and Providing Recommendations Respective Thereof" – A method and system for providing recommendations to content items respective of contextual insights. The method comprises receiving at least one multimedia content element; generating at least one signature for the received multimedia content element; querying a user profile of the user to determine a user interest; generating a contextual insight respective of the user interest and the at least one signature; searching, by means of the at least one contextual insight, for one or more content items that matches the contextual insight; and returning the at least one matching content item to the user node as a recommendation. *US Provisional patent application 62/274,295 filed on 3-Jan-2016.*	2	A
COR-129 *Prov.*	"System and Methods Thereof For Generating a Facial Representation Of a User" – A system and method for identification of a user's face through a plurality of multimedia content elements. Upon receiving access to one or more sources associated with the user's device, the system identifies a plurality of multimedia content elements exist therein. The system then generates at least one signature for each multimedia content element. Each of the generated signatures represents a concept. The	3	A

	system then correlates the concepts respective of the generated signatures to determine a cluster of facial concepts associated with the user. Then, the system generates a facial representation of the user respective of the correlation. *US Provisional patent application 62/287,189 filed on 30-Jan-2016.*		
COR-130 *Prov.*	"System and Methods Thereof For Generating a Life Model Of a User" – A method and system for providing recommendations to content items respective of contextual insights. The method comprises receiving at least one multimedia content element; generating at least one signature for the received multimedia content element; querying a user profile of the user to determine a user interest; generating a contextual insight respective of the user interest and the at least one signature; searching, by means of the at least one contextual insight, for one or more content items that matches the contextual insight; and returning the at least one matching content item to the user node as a recommendation. *US Provisional patent application 62/292,387 filed on 8-Feb-2016.*	3	A
COR-131 *Prov.*	"System And Methods For Providing Recommendations Respective of User Interests" – A system and method for providing recommendations to a user respective of the user's interest. Upon receiving at least one variable captured by a user device, the system queries a user profile to determine a user's interest. The user interest is a computer readable indicator represents a positive or negative impression of the user respective of a certain content at a certain time frame. The system then crawls through one or more data sources to identify multimedia content elements that meet the user interest. The identified multimedia content elements are then provided to the user device. *US Provisional patent application 62/292,388 filed on 8-Feb-2016.*	3	A
COR-132 *identified*	"A System and Methods for Automatic Clustering of Multimedia Content Elements Identified Through Sources of Multimedia Content" – A method for automatic clustering	3	A

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	of multimedia content elements associated with a user is provided. The method comprises receiving at least one multimedia content element from a source of multimedia content elements; generating at least one signature for the at least one multimedia content element; generating at least one tag based on the least one generated signature, wherein the at least one tag is searchable by the user device; and adding the at least one multimedia content element to a cluster based on the generated tag.		
COR-133 *identified*	"A System and Methods for Generating Customized Clusters of Multimedia Content Elements Respective of a User's Profile" – A system receives access to a plurality of sources in which multimedia content elements associated with the user are stored. The system analyzes the multimedia content elements and generates tags respective thereof. The system further generates a user's profile. Based on the user's profile and the generated tags, the system clusters the multimedia content elements in customized clusters. The customized clusters may adaptively change based on new variables associated with the user's profile. The system may further generates a mosaic representative of the clusters and provide the mosaic for display of a user device.	5	A
COR-134 *identified*	"A System and Methods for Providing Recommendations to Users Respective of Customized Clusters Generated" – A continuation in part of COR-133 that enables the identification of content related to the customized clusters and providing said content to the user device as recommendations.	4	A
COR-135 *identified*	"A System and Methods for Automated Peer To Peer Sharing of Multimedia Content Elements" – A system receives access to a plurality of sources in which multimedia content elements associated with the user are stored. The system analyzes the multimedia content elements and generates tags respective thereof. Respective of the tags, the system enables sharing of the multimedia content elements with other users to which the	4	A

	generated tags are associated.		
COR-136 *identified*	"A System and Method For Identifying a Plurality of Multimedia Content Elements As Contextually Identical" – A system receives a plurality of multimedia content elements. The multimedia content elements are analyzed and respective thereof the context of the multimedia content elements is determined. Based on the context, the system determines whether one or more of the multimedia content elements are similar or practically identical.	5	B
COR-137 *identified*	"A System and Method For Identifying Environmental Variables Associated with a User Based on a Plurality of Multimedia Content Elements Captured By the User" – A system receives a plurality of multimedia content elements. The multimedia content elements are analyzed and respective thereof the context of the multimedia content elements is determined. Based on the context, the system generates one or more environmental variables related to the user.	2	A
COR-138 *identified*	"A System and Method For Identifying Environmental Variables Associated with a User Based on a Plurality of Multimedia Content Elements Captured By the User" – A continuation in part of COR-138 that enables determination of a causality respective of the context and/or environmental variables.	2	A

Following is a table that summarizes the ranking of the inventions based on our findings. The scores are based on our experience, however, they should not be viewed as a categorical review, but rather as a basis for a more detailed discussion leading to the decision on what to do with each category of invention.

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		IP Standing				
		1	2	3	4	5
Business Ranking	A		COR-028[I] COR-032[II] COR-043[IV] COR-044[IV] COR-053[I] COR-055[II] COR-066[II] COR-072[IV] COR-092[II] COR-116[I] COR-124[II] COR-125[II] COR-128[II] COR-137[IV] COR-138[IV]	COR-011[I] COR-015[IV] COR-018[I] COR-019[I] COR-026[I] COR-029[I] COR-033[I] COR-049[II] COR-052[II] COR-038[IV] COR-054[II] COR-058[V] COR-062[II] COR-063[IV] COR-071[IV] COR-077[II] COR-078[II] COR-086[II] COR-093[II] COR-095[II] COR-109[IV] COR-110[IV] COR-117[II] COR-118[II] COR-119[IV] COR-123[II] COR-129[III] COR-130[III] COR-131[III] COR-132[IV]	COR-004[I] COR-008[I] COR-016[IV] COR-021[IV] COR-031[II] COR-035[I] COR-036[I] COR-037[I] COR-020[IV] COR-041[I] COR-042[II] COR-048[II] COR-053[II] COR-057[IV] COR-059[IV] COR-065[II] COR-075[II] COR-079[II] COR-083[II] COR-084[II] COR-088[II] COR-096[I] COR-097[I] COR-098[II] COR-099[II] COR-101[II] COR-102[II] COR-115[I] COR-120[III] COR-134[IV] COR-135[IV]	COR-001[V] COR-002[V] COR-003[I] COR-013[I] COR-017[IV] COR-025[I] COR-046[II] COR-047[IV] COR-060[IV] COR-070[II] COR-073[II] COR-076[II] COR-133[IV]
	B			COR-005[II] COR-006[II] COR-007[II] COR-030[I] COR-039[II] COR-050[II] COR-064[IV] COR-068[IV] COR-081[II] COR-082[II] COR-089[II] COR-094[II] COR-111[II] COR-112[II] COR-113[II] COR-114[II] COR-126[II]	COR-012[I] COR-014[IV] COR-020[II] COR-022[IV] COR-034[I] COR-040[I] COR-045[I] COR-051[II] COR-056[II] COR-067[II] COR-069[II] COR-074[II] COR-080[II] COR-085[II] COR-122[II] COR-127[II]	COR-009[II] COR-010[II] COR-023[I] COR-024[IV] COR-027[I] COR-054[II] COR-107[II] COR-108[IV] COR-136[IV]
	C					

(I) – allowed/issued; (II) patent filed; (III) provisional filed; (IV) identified; (V) abandoned/not filed

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RECOMMENDATIONS AND SUGGESTED DECISIONS

Resulting from the above analysis we would like to make the initial recommendations below. We suggest that these recommendations be discussed in a management meeting so as to agree on the final scores of the inventions, allocate budgets, determine schedules and begin actual work on the inventions.

1. The following inventions are now being prepared to be converted to formal US patent applications: COR-121, COR-132, COR-133, COR-134, COR-135, COR-136, COR-137, COR-138.

2. It is important to make sure that patentable information is not publically disclosed prior to filing of patent applications. In urgent cases a provisional patent application can be filed to ensure a shorter response time. While USA law provides for certain grace periods it should be noted that changes in the law may have changed such grace periods in significant ways. Please consult us on these issues on a regular basis. Specifically, the USA has completed the move from the *first-to-invent* doctrine to the *first-inventor-to-file*. As a result an inventor(s) who has filed before another inventor will have priority to get a patent, as opposed to the older doctrine. Therefore, it may be preferable to attempt to file at least a provisional patent applications at this stage.

3. This document should be considered a working document that is to be updated as new inventions are made. This will enable the tracking of the inventions and ensure that proper decisions may be taken.

If you have any further questions or requests please do not hesitate to be in touch with us. We can be reached by e-mail at reuven@hh-law.co.il or or@hh-law.co.il, Reuven's cell phone at 052-325-8840, Or's cell 050-731-1814 or the office at 03-608-1122.

Sincerely Yours,

Reuven Marko
Technical Advisor Specializing in Patents

Cc: Adv. Or Agassi – HH Law

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Where IP matters™

Cortica IP overview
Sep 2016

eNitiatives
Where IP matters™

Our firm was established in 1999 and since then has been providing the full range of patent related services, from patent drafting and prosecution to commercial transactions of sale or licensing as well as preparation of patent litigation in cases of infringement to top tier start-up companies. We also provide strategic consultation and business development services to a variety of top hi-tech start-ups. Our clientele includes established multi-nationals start-ups as well as early stage startup ventures picked after an IP due-diligence process. Our team brings added value to its clients by taking into account also the business perspective based on years of hands-on experience in commercializing patents. The process used in the development of patent applications ensures saving of significant time from the inventors while ensuring their knowledge of the patents being prosecuted. By now our firm had the privilege of being part of 38 successful acquisitions out of 100 companies we have assisted.

IP Strategy

1. Identifying areas where Cortica's innovation is of competitive edge.

2. Enhance IP portfolio by identifying new inventions constantly.

3. File for patents that contribute to the company's business value in areas where competitors are active, potential acquirers operate and computer vision is essential.

4. Map Competitors.

Cortica's IP in numbers

- Inventions: 206
- Priority dating back to 2006
- Applications filed: 166
- Allowed/issued: 43
- Additional identified: 52
- Territories: USA, EU, CN, JP, IN, KR

Competitive environment

- Pinterest ~10
- Snapchat ~40
- Google Photos >650
- Magic Leap ~300
- Sentient ~100
- Vicarious ~10

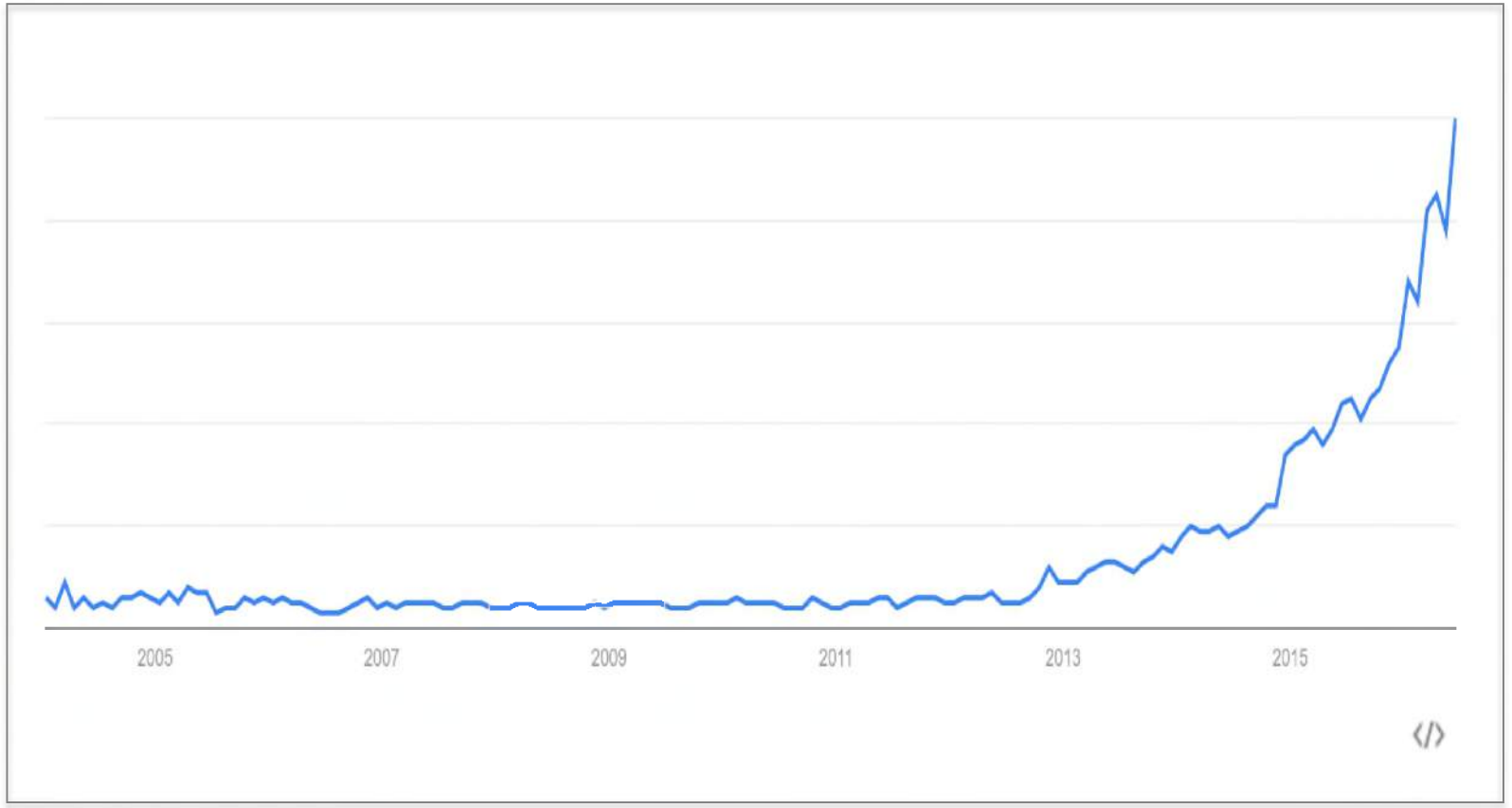
Competitive environment

Core

- Articles
  1997-2006- 432,000
  2007-2016- 1,170,000

- Patents allowed
  1996-2006- 6
  2007-2016- 82

- Pending applications
  1996-2006- 9
  2007-2016- 346



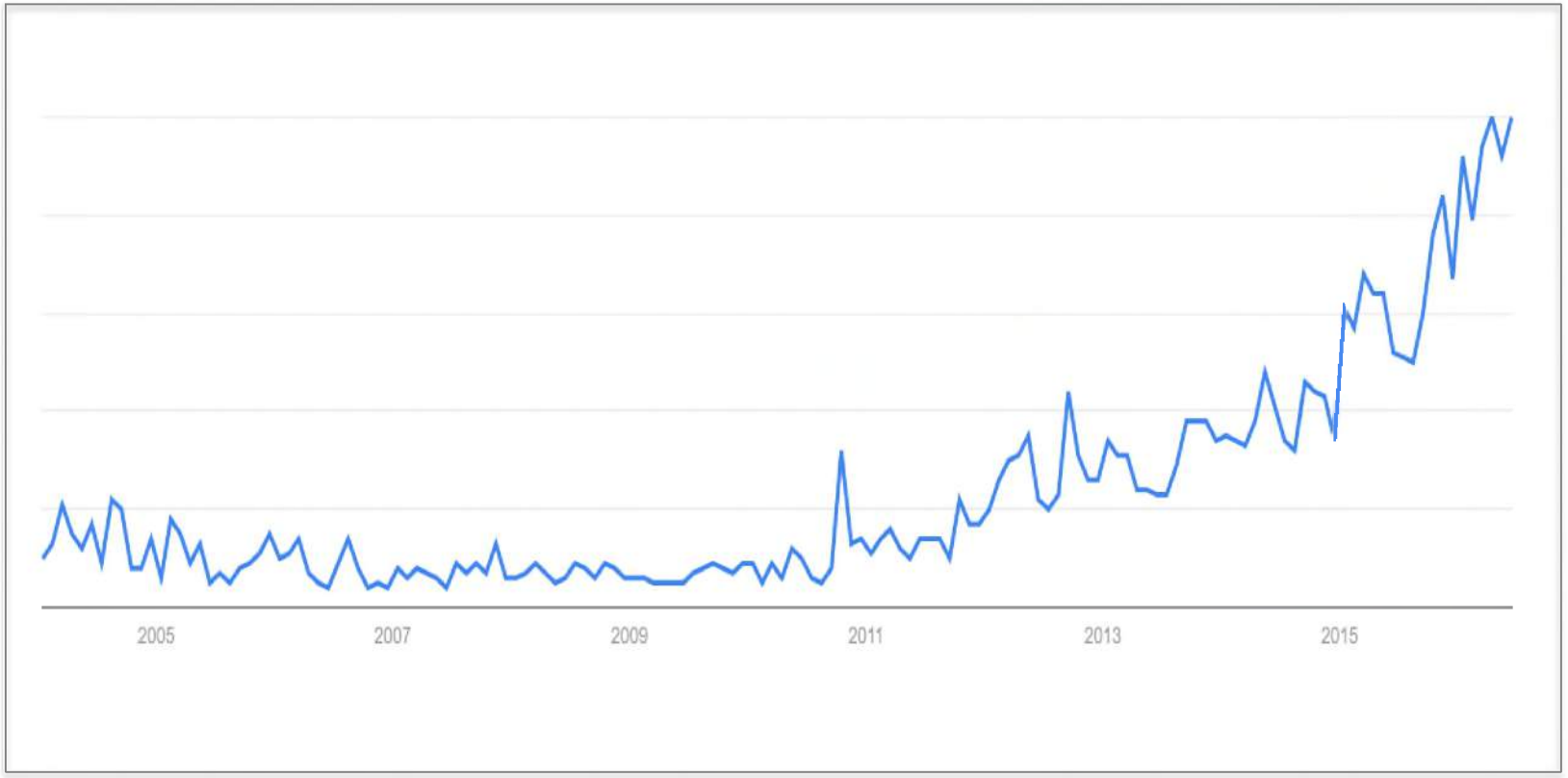
Competitive environment

Autonomous vehicles

- Articles
  2000-2010- 180,000
  2010-2016- 907,000

- Patents allowed
  1980-2010- 1436
  2010-2016- 2400

- Pending applications
  1980-2010- 1453
  2010-2016- 3000

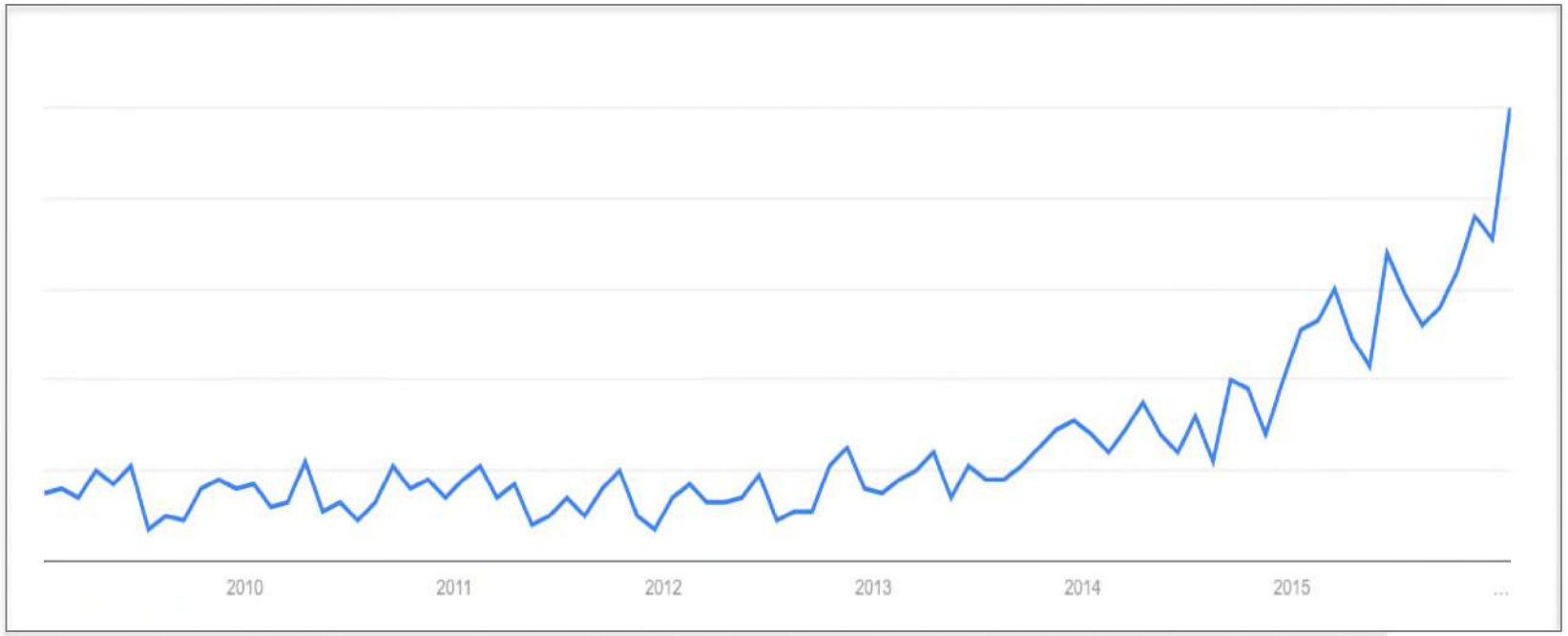


Medical comparison

- Articles
  2000-2012- 573,000
  2012-2016- 1,240,000

- Patents allowed
  1996-2010- 220
  2010-2016- 800

- Pending applications
  2007-2016- 600
  2000-2016- 197



Cortica IP Domains

- **Core**- multimedia content processing, cortex generation, concepts/context identification, parallel processing.
- **Me!**- Consumer product for organization of multimedia content associated with a user, personalization, UX enhancer.
- **Medical**- Analysis and comparison of symptoms, auto-diagnostics and big data analysis.
- **Ads**- contextual matching of ads to content, trends monitoring, impressions analysis.
- **Mobile**- multimedia content processing, recommendations engine, profiling tools.
- **Big Data**- causality analysis, trends identification, data mining.
- **Autonomous vehicles**- modeling driving decisions, obstacles identification and reaction.
- **AI**- hardware devices for consumers analysis, security, financial modeling based on multimedia content analysis.
- **Search**- using multimedia as search query, multimedia content search engine.

Key patents

- A System for Matching Advertisements to Multimedia Elements *9,191,626*
- A System for Identifying Concepts in Multimedia Elements *9,031,999*
- Cortex Generation *8,922,414*
- Large-Scale Matching for Multimedia Deep-Content-Classification *8,326,775*
- A Computing Device for Parallel Processing of Data Streams *8,655,801*
- Generation of Conceptrons Respective of Multimedia Data Content *8,266,185*
- Methods for Sorting Multimedia Elements *14/050,991*
- Big Data Analysis of Multimedia Elements *9,256,668*
- A System for Parallel Processing of Data Streams *EP1,949,311*

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Business Ranking	IP Standing 1	2	3	4	5
A		COR-028[I] COR-032[II] COR-043[IV] COR-044[IV] COR-053[I] COR-055[II] COR-066[II] COR-072[IV] COR-092[II] COR-116[I] COR-124[II] COR-125[II] COR-128[II] COR-137[III] COR-138[III] COR-141[III] COR-147[III] COR-165[IV] COR-166[IV] COR-180[III] COR-181[III] COR-196[II]	COR-011[I] COR-015[IV] COR-018[I] COR-019[I] COR-026[I] COR-029[I] COR-033[I] COR-049[I] COR-052[II] COR-038[IV] COR-054[II] COR-058[V] COR-062[II] COR-063[IV] COR-071[IV] COR-077[II] COR-078[II] COR-086[II] COR-093[II] COR-095[II] COR-109[IV] COR-110[IV] COR-117[II] COR-118[II] COR-119[IV] COR-123[II] COR-129[III] COR-130[III] COR-131[III] COR-132[II] COR-139[III] COR-144[III] COR-156[IV] COR-157[IV] COR-158[IV] COR-159[IV] COR-160[IV] COR-161[IV] COR-167[IV] COR-172[IV] COR-174[III] COR-178[III] COR-179[III] COR-185[III] COR-186[IV] COR-191[III] COR-192[III] COR-193[III]	COR-004[I] COR-008[I] COR-016[IV] COR-021[IV] COR-031[II] COR-035[I] COR-036[I] COR-037[I] COR-020[IV] COR-041[I] COR-042[II] COR-048[II] COR-053[II] COR-057[IV] COR-059[IV] COR-065[II] COR-075[II] COR-079[II] COR-083[II] COR-084[II] COR-088[II] COR-096[I] COR-097[I] COR-098[II] COR-099[II] COR-101[II] COR-102[II] COR-115[I] COR-120[III] COR-134[III] COR-135[III] COR-140[III] COR-152[III] COR-153[III] COR-154[III] COR-162[IV] COR-163[IV] COR-164[IV] COR-168[IV] COR-173[II] COR-175[III] COR-177[III] COR-194[III]	COR-001[V] COR-002[V] COR-003[I] COR-013[I] COR-017[IV] COR-025[I] COR-046[II] COR-047[IV] COR-060[IV] COR-070[II] COR-073[II] COR-076[II] COR-133[III] COR-145[III] COR-149[III] COR-155[IV] COR-182[III]
B			COR-005[II] COR-006[II] COR-007[II] COR-030[I] COR-039[II] COR-050[II] COR-064[IV] COR-068[III] COR-081[I] COR-082[II] COR-089[II] COR-094[II] COR-111[II] COR-112[II] COR-113[II] COR-114[II] COR-126[II] COR-148[III] COR-150[IV] COR-151[IV] COR-169[IV] COR-170[IV] COR-184[IV]	COR-012[I] COR-014[IV] COR-020[II] COR-022[IV] COR-034[I] COR-040[I] COR-045[I] COR-051[II] COR-056[II] COR-067[II] COR-069[II] COR-074[II] COR-080[II] COR-085[II] COR-122[II] COR-127[II] COR-146[II] COR-171[IV] COR-176[III] COR-178[III] COR-190[II]	COR-009[II] COR-010[II] COR-023[I] COR-024[IV] COR-027[I] COR-054[II] COR-107[II] COR-108[IV] COR-136[III]
C					

(I) – allowed/issued; (II) patent filed; (III) provisional filed; (IV) identified; (V) abandoned/not filed

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Contribution to valuation

5A- 3-5M$

4A- 1-3M$

5B- 0.5-1M$

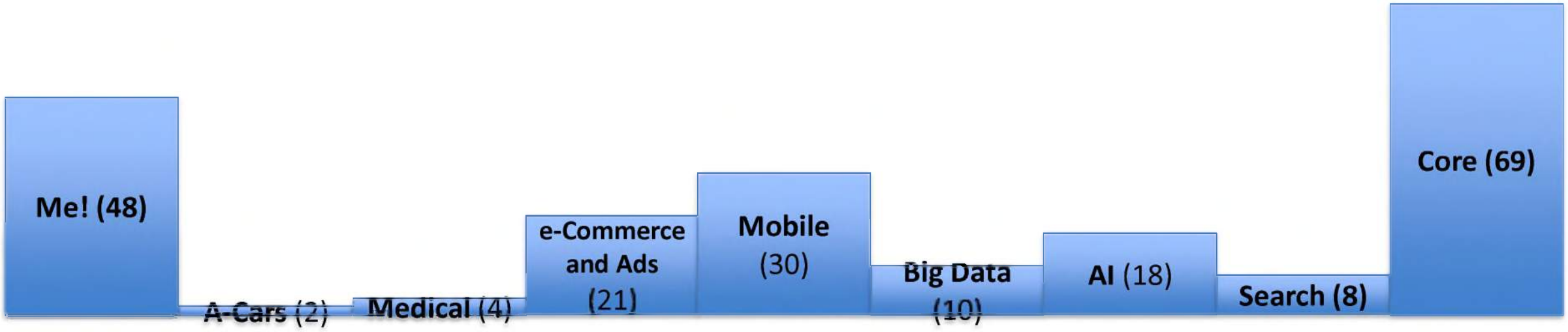
3A- 0.5-1M$

4B- 0.3-1M$

2A- 100K-500K$

3B- 100K-500K$

Patents diversification



Goals for 2017-2018

- Focus on areas where Cortica has a competitive edge:
  a) Cortex simplification
  b) Consumers & Mobile
  c) Search & AI
  d) Autonomous Vehicles
  e) Medical
  f) Augmented reality
- Complete filings of 100-400 patent applications.
- File key applications in additional jurisdictions: EN, CN, JP, IN and KR.
- Perform periodic interviews with the R&D teams in US and IL.
- Reach >100 allowances.

Summary of Cortica Vs. competitors

- Cortica's Parallel processing beats deep learning and static neural networks in performance.
- Cortica oversaw the deep learning growth- Priority date dating back to 2006.
- Me!- seeing the future. Only few dozens of patents to date.
- Trends analysis based on signature generation more efficient then metadata.
- Contextual granularity.

נספח 25

התכתובת עם מר סומרס בעניין מסחור פטנטים.

Annex 25

The correspondence with Mr. Sommers on patent commercialization.

---------- Forwarded message ---------
From: **igal raichelgauz** <igal.raichelgauz@cortica.com>
Date: Mon, Nov 20, 2017 at 11:42 PM
Subject: Re: monetization options for Cortica advertising patents
To: Or Agassi <Or@hh-law.co.il>

Or,

Could you please help with the below
We had a board call today and I was requested to update on the proposed sale of the advertising Patents

On Fri, 27 Oct 2017 at 18:03 igal raichelgauz <igal.raichelgauz@cortica.com> wrote:
This doesn't add up with all previous data we got

Please help

---------- Forwarded message ---------
From: chris sommers <csommers@thinkfire.com>
Date: Fri, 27 Oct 2017 at 17:54
Subject: Re: monetization options for Cortica advertising patents
To: <igal.raichelgauz@cortica.com>
CC: Michael Ben-Shimon | M&B IP Analysts <michael@mb-ip.com>, Or Agassi <or@enitiatives.biz>

Hi Igal,

Thank you again for the opportunity to explore potential monetization options with the Cortica portfolio.

We understand the objective is to monetize the advertising-specific patents within the portfolio, and retain the remaining patents, and we've spent a lot of time internally debating how best to proceed.

After a detailed discussion with Michael, the issue we are running into is that the entire patent portfolio is quite intertwined. So while there are definitely advertising-specific patents, such patents are continuations (i.e. family member) of other patents that are not related to advertising.

This complicates matters considerably since in a patent sale or license, most buyers typically want all family members, and therefore it will be difficult to limit a sale or license to only those specific advertising patents. If we are to make a sale, the overall value would likely be less given the buyer would not be purchasing the entire patent family.

While we don't have a complete view of how many patents we might be able to label as advertising-specific, the total value in a sale opportunity will most likely be in the low 7 figures, perhaps US $2.0M-$4.0M, if we can get buyers interested in purchasing a partial family.

By conducting a sales effort, we will also get a good feel for whether any companies might be interested in a license and we can then proceed that route as interest dictates.

If Cortica is interested in pursuing this path given the potential returns described, ThinkFire and Michael's firm are ready to partner together to solicit the market and generate the best possible outcome.

We are happy to have a call at your convenience to discuss further and determine the best path forward.

Best regards

Chris Sommers

CEO, ThinkFire

נספח 26

דו"ח פברואר 2018.

Annex 26

February 2018 Report.

ENI RF	M&B Ref	ApplicationNum	PatentNum	PriorityDate	FilingDate	Status	Type	Office actions handled
COR-062	CORT P0(	14/267,990		26/10/2005	02/05/2014	Published	Utility: Continuation-in-Part	3
COR-065	CORT P0(	14/280,928		26/10/2005	19/05/2014	Published	Utility: Continuation-in-Part	2
COR-052	CORT P0(	14/302,495	9477658	26/10/2005	12/06/2014	Issued	Utility: Non-Provisional	1
COR-091	CORT P0(	15/289,696		26/10/2005	10/10/2016	Allowed	Utility: Continuation	1
COR-005	CORT P0(	14/302,487		26/10/2005	12/06/2014	Allowed	Utility: Non-Provisional	3
COR-067	CORT P01	14/314,567	9747420	26/10/2005	25/06/2014	Issued	Utility: Non-Provisional	2
COR-004	CORT P01	12/195,863	8326775	26/10/2005	21/08/2008	Issued	Utility: Non-Provisional	2
COR-035	CORT P01	13/682,132	8990125	26/10/2005	20/11/2012	Issued	Utility: Continuation	0
COR-118	CORT P01	14/619,767	9384196	26/10/2005	11/02/2015	Issued	Utility: Non-Provisional	0
COR-142	CORT P01	15/140,977		26/10/2005	28/04/2016	Published	Utility: Continuation	1
COR-004UK	CORT P01	1001219.3	GB246383	21/08/2008	21/08/2008	Issued	Utility: Foreign	2
COR-004WO	CORT P01	PCT/US08/73852		21/08/2007	21/08/2008	Published	Utility: PCT	-
COR-007	CORT P01	12/348,888	9798795	26/10/2005	05/01/2009	Issued	Utility: Non-Provisional	6
COR-003	CORT P01	12/084,150	8655801	26/10/2005	07/04/2009	Issued	Utility: Non-Provisional	3
COR-084	CORT P01	14/175,569		26/10/2005	07/02/2014	Published	Utility: Continuation	2
COR-003EP	CORT P01	06 809 796.3	1949311	26/10/2006	26/10/2006	Issued	Utility: Foreign	3
COR-003EP	CORT P0175EP-FR		1949311	26/10/2006	26/10/2006	Issued	Utility: Foreign	-
COR-003EP	CORT P0175EP-GE		1949311	26/10/2006	26/10/2006	Issued	Utility: Foreign	-
COR-003EP	CORT P0175EP-UK		1949311	26/10/2006	26/10/2006	Issued	Utility: Foreign	0
COR-011	CORT P01	12/434,221	8112376	26/10/2005	01/05/2009	Issued	Utility: Non-Provisional	1
COR-028	CORT P01	13/344,400	8959037	26/10/2005	05/01/2012	Issued	Utility: Continuation	1
COR-116	CORT P01	14/620,863	9292519	26/10/2005	12/02/2015	Issued	Utility: Non-Provisional	0
COR-037	CORT P01	12/507,489	8386400	26/10/2005	22/07/2009	Issued	Utility: Non-Provisional	1
COR-037	CORT P01	13/731,906	8799175	26/10/2005	31/12/2012	Issued	Utility: Continuation	1
COR-036	CORT P01	13/731,921	8799176	26/10/2005	31/12/2012	Issued	Utility: Continuation	1
COR-096	CORT P01	14/334,903	9104747	26/10/2005	18/07/2014	Issued	Utility: Continuation	0
COR-097	CORT P01	14/334,908	9009086	26/10/2005	18/07/2014	Issued	Utility: Continuation	0
COR-012	CORT P01	12/538,495	8312031	26/10/2005	10/08/2009	Issued	Utility: Non-Provisional	1
COR-030	CORT P01	13/668,559	8880566	26/10/2005	05/11/2012	Issued	Utility: Continuation	1
COR-034	CORT P01	13/668,557	8880539	26/10/2005	05/11/2012	Issued	Utility: Continuation	1
COR-114	CORT P01	14/513,863		26/10/2005	14/10/2014	Published	Utility: Non-Provisional	5
COR-114	CORT P01	14/530,970	9449001	26/10/2005	03/11/2014	Issued	Utility: Non-Provisional	1
COR-196	CORT P01	15/227,531	9886437	26/10/2005	03/08/2016	Allowed	Utility: Continuation	1
COR-013	CORT P01	12/603,123	8266185	26/10/2005	21/10/2009	Issued	Utility: Non-Provisional	1

COR-029	CORT P01	13/602,858	8868619	26/10/2005	04/09/2012	Issued	Utility: Continuation	1
COR-111	CORT P01	14/509,558	9575969	26/10/2005	08/10/2014	Issued	Utility: Continuation	2
COR-207	CORT P01	15/416,415		26/10/2005	26/01/2017	Published	Utility: Continuation	0
COR-023	CORT P01	12/822,005	8818916	26/10/2005	23/06/2010	Issued	Utility: Non-Provisional	2
COR-095	CORT P01	14/321,231		26/10/2005	01/07/2014	Published	Utility: Continuation	5
COR-026	CORT P01	13/624,397	9191626	26/10/2005	21/09/2012	Issued	Utility: Non-Provisional	1
COR-123	CORT P01	14/856,981	9652785	26/10/2005	17/09/2015	Issued	Utility: Continuation	2
COR-027	CORT P01	13/685,182	9235557	26/10/2005	26/11/2012	Issued	Utility: Non-Provisional	2
COR-125	CORT P01	14/962,532		26/10/2005	08/12/2015	Published	Utility: Continuation	0
COR-033	CORT P01	13/766,463	9031999	26/10/2005	13/02/2013	Issued	Utility: Non-Provisional	1
COR-117	CORT P01	14/643,694	9672217	26/10/2005	10/03/2015	Issued	Utility: Non-Provisional	1
COR-009	CORT P01	13/773,112		26/10/2005	21/02/2013	Published	Utility: Non-Provisional	5
COR-018	CORT P01	13/773,118	9087049	26/10/2005	21/02/2013	Issued	Utility: Non-Provisional	0
COR-031	CORT P01	13/770,603		26/10/2005	19/02/2013	Published	Utility: Non-Provisional	4
COR-040P	CORT P01	13/874,195	9286623	26/10/2005	30/04/2013	Issued	Utility: Non-Provisional	1
COR-127	CORT P01	15/019,223		26/10/2005	09/02/2016	Published	Utility: Continuation	0
COR-041	CORT P01	14/013,636	9372940	26/10/2005	29/08/2013	Issued	Utility: Non-Provisional	2
COR-132	CORT P01	15/162,042		26/10/2005	23/05/2016	Published	Utility: Continuation	0
COR-010	CORT P01	14/087,800		26/10/2005	22/11/2013	Published	Utility: Non-Provisional	2
COR-025	CORT P01	13/874,159	8922414	12/02/2013	30/04/2013	Issued	Utility: Non-Provisional	1
COR-115	CORT P01	14/573,652	9197244	12/02/2013	17/12/2014	Issued	Utility: Non-Provisional	1
COR-122	CORT P01	14/929,976	9438270	12/02/2013	02/11/2015	Issued	Utility: Continuation	1
COR-167	CORT P01	15/188,463	9691164	12/02/2013	21/06/2016	Issued	Utility: Continuation	1
COR-025CN	CORT P01	201380030434.X	ZL201380(	09/12/2014	09/12/2014	Issued	Utility: Foreign	1
COR-025DE	CORT P01	91DE		12/02/2013	13/08/2015	Published	Utility: Foreign	0
COR-025JP	CORT P01	2015-510521	5922841	04/11/2014	04/11/2014	Issued	Utility: Foreign	2
COR-025KR	CORT P01	10-2015-7025153	10-165583	12/02/2013	14/09/2015	Issued	Utility: Foreign	1
COR-025WO	CORT P01	PCT/US13/46155		12/02/2013	17/06/2013	Published	Utility: PCT	0
COR-025WO	CORT P01	1417750.5	1417751	17/06/2013	07/10/2014	Issued	Utility: Foreign	1
COR-050	CORT P01	14/168,811		26/10/2005	30/01/2014	Published	Utility: Non-Provisional	3
COR-053	CORT P01	14/167,388	9330189	26/10/2005	29/01/2014	Issued	Utility: Non-Provisional	0
COR-143	CORT P01	15/084,083	9646006	26/10/2005	29/03/2016	Issued	Utility: Continuation	1
COR-197	CORT P01	15/585,698		26/10/2005	03/05/2017	Published	Utility: Continuation	0
COR-054	CORT P01	14/198,154	9646005	26/10/2005	05/03/2014	Issued	Utility: Non-Provisional	1
COR-209	CORT P01	15/585,707		26/10/2005	03/05/2017	Published	Utility: Continuation	0

COR-058	CORT P01	14/198,178		26/10/2005	05/03/2014 Published	Utility: Non-Provisional 0
COR-056	CORT P01	14/203,047		26/10/2005	10/03/2014 Published	Utility: Non-Provisional 3
COR-045	CORT P01	14/013,740	9256668	26/10/2005	29/08/2013 Issued	Utility: Non-Provisional 1
COR-126	CORT P01	14/994,435		26/10/2005	13/01/2016 Published	Utility: Continuation 0
COR-039	CORT P01	14/209,448		26/10/2005	13/03/2014 Allowed	Utility: Non-Provisional 4
COR-020	CORT P01	14/096,802	9489431	26/10/2005	04/12/2013 Issued	Utility: Non-Provisional 1
COR-070	CORT P02	14/050,991		26/10/2005	10/10/2013 Published	Utility: Non-Provisional 3
COR-032	CORT P02	14/096,901	14096901	26/10/2005	04/12/2013 Issued	Utility: Non-Provisional 2
COR-074	CORT P02	14/096,865		26/10/2005	04/12/2013 Published	Utility: Non-Provisional 3
COR-055	CORT P02	14/224,923		26/10/2005	25/03/2014 Published	Utility: Non-Provisional 2
COR-042	CORT P02	14/212,213		26/10/2005	14/03/2014 Published	Utility: Non-Provisional 3
COR-049	CORT P02	14/043,230	9529984	26/10/2005	01/10/2013 Issued	Utility: Non-Provisional 3
COR-019P	CORT P02	13/874,115	9218606	26/10/2005	30/04/2013 Issued	Utility: Non-Provisional 1
COR-124	CORT P02	14/955,788	9792620	26/10/2005	01/12/2015 Issued	Utility: Continuation 0
COR-048	CORT P02	13/856,201		26/10/2005	03/04/2013 Published	Utility: Non-Provisional 4
COR-046	CORT P02	14/171,158		26/10/2005	03/02/2014 Published	Utility: Non-Provisional 5
COR-072	CORT P02	14/700,809		26/10/2005	30/04/2015 Published	Utility: Non-Provisional 0
COR-073	CORT P02	14/509,543	9396435	26/10/2005	08/10/2014 Issued	Utility: Non-Provisional 1
COR-173	CORT P02	15/189,386		26/10/2005	22/06/2016 Published	Utility: Continuation 2
COR-075	CORT P02	14/499,795		26/10/2005	29/09/2014 Published	Utility: Non-Provisional 2
COR-076	CORT P02	14/509,552		26/10/2005	08/10/2014 Published	Utility: Non-Provisional 3
COR-077	CORT P02	14/621,643		26/10/2005	13/02/2015 Published	Utility: Non-Provisional 0
COR-078	CORT P02	14/530,918	9767143	26/10/2005	03/11/2014 Issued	Utility: Non-Provisional 1
COR-079	CORT P02	14/530,913	9558449	26/10/2005	03/11/2014 Issued	Utility: Non-Provisional 1
COR-189	CORT P02	15/388,035		26/10/2005	22/12/2016 Published	Utility: Continuation 0
COR-081	CORT P02	14/621,653	9466068	26/10/2005	13/02/2015 Issued	Utility: Non-Provisional 0
COR-184	CORT P02	15/258,072		26/10/2005	07/09/2016 Published	Utility: Continuation 0
COR-082	CORT P02	14/596,605		26/10/2005	14/01/2015 Published	Utility: Non-Provisional 2
COR-083	CORT P02	14/596,553		26/10/2005	14/01/2015 Published	Utility: Non-Provisional 1
COR-085	CORT P02	14/621,661		26/10/2005	13/02/2015 Published	Utility: Non-Provisional 1
COR-086	CORT P02	14/597,324		26/10/2005	15/01/2015 Published	Utility: Non-Provisional 2
COR-088	CORT P02	14/606,546		27/01/2014	27/01/2015 Published	Utility: Non-Provisional 2
COR-092	CORT P02	14/700,801		26/10/2005	30/04/2015 Published	Utility: Non-Provisional 1
COR-094	CORT P02	14/638,210		26/10/2005	04/03/2015 Published	Utility: Non-Provisional 0
COR-098	CORT P02	14/811,185		26/10/2005	28/07/2015 Published	Utility: Non-Provisional 2

COR-099	CORT P02	14/811,201	26/10/2005	28/07/2015	Published	Utility: Non-Provisional	2
COR-101	CORT P02	14/811,209	26/10/2005	28/07/2015	Published	Utility: Non-Provisional	0
COR-102	CORT P02	14/811,219	26/10/2005	28/07/2015	Published	Utility: Non-Provisional	0
COR-066	CORT P02	14/608,880	26/10/2005	29/01/2015	Published	Utility: Non-Provisional	2
COR-089	CORT P02	14/638,176	26/10/2005	04/03/2015	Published	Utility: Non-Provisional	1
COR-080	CORT P03	14/530,922	26/10/2005	03/11/2014	Published	Utility: Non-Provisional	3
COR-112	CORT P03	14/811,227	26/10/2005	28/07/2015	Published	Utility: Non-Provisional	1
COR-093	CORT P03	14/836,249	26/10/2005	26/08/2015	Published	Utility: Non-Provisional	0
COR-107	CORT P03	14/836,254	26/10/2005	26/08/2015	Published	Utility: Non-Provisional	0
COR-120	CORT P05	15/336,218	15/12/2015	27/10/2016	Published	Utility: Non-Provisional	1
COR-120PCT	CORT P05	PCT/US16/59111	15/12/2015	27/10/2016	Published	Utility: PCT	0
COR-128	CORT P06	15/206,711	26/10/2005	11/07/2016	Published	Utility: Non-Provisional	0
COR-129	CORT P06	15/206,792	26/10/2005	11/07/2016	Published	Utility: Non-Provisional	0
COR-131	CORT P06	15/206,726	26/10/2005	11/07/2016	Published	Utility: Non-Provisional	0
COR-130	CORT P06	15/259,907	26/10/2005	08/09/2016	Published	Utility: Non-Provisional	0
COR-136	CORT P06	15/296,551	26/10/2005	18/10/2016	Published	Utility: Non-Provisional	0
COR-135	CORT P06	15/419,567	26/10/2005	30/01/2017	Published	Utility: Non-Provisional	0
COR-208	CORT P06	15/420,989	26/10/2005	31/01/2017	Published	Utility: Non-Provisional	0
COR-208PCT	CORT P06	PCT/US17/15831	13/03/2016	31/01/2017	Published	Utility: PCT	0
COR-139	CORT P06	15/463,414	26/10/2005	20/03/2017	Published	Utility: Non-Provisional	0
COR-133	CORT P06	15/452,148	26/10/2005	07/03/2017	Published	Utility: Non-Provisional	0
COR-121	CORT P06	15/455,363	15/12/2015	10/03/2017	Published	Utility: Non-Provisional	0
COR-134	CORT P06	15/456,902	26/10/2005	13/03/2017	Published	Utility: Non-Provisional	0
COR-068	CORT P06	15/589,558	26/10/2005	08/05/2017	Published	Utility: Continuation-in-Part	0
COR-140	CORT P06	15/474,019	26/10/2005	30/03/2017	Published	Utility: Non-Provisional	0
COR-141	CORT P06	15/601,440	26/10/2005	22/05/2017	Published	Utility: Non-Provisional	0
COR-144	CORT P06	15/601,303	26/10/2005	22/05/2017	Published	Utility: Non-Provisional	0
COR-145	CORT P06	15/601,309	26/10/2005	22/05/2017	Published	Utility: Non-Provisional	0
COR-137	CORT P06	15/602,669	26/10/2005	23/05/2017	Published	Utility: Non-Provisional	0
COR-146	CORT P06	15/602,770	26/10/2005	23/05/2017	Published	Utility: Non-Provisional	0
COR-148	CORT P06	15/611,019	26/10/2005	01/06/2017	Published	Utility: Non-Provisional	0
COR-149	CORT P06	15/601,314	26/10/2005	22/05/2017	Published	Utility: Non-Provisional	0
COR-147	CORT P06	15/605,521	26/10/2005	25/05/2017	Published	Utility: Non-Provisional	0
COR-152	CORT P06	15/605,527	26/10/2005	25/05/2017	Published	Utility: Non-Provisional	0
COR-153	CORT P06	15/608,493	26/10/2005	30/05/2017	Published	Utility: Non-Provisional	0

COR-168	CORT P06	15/612,643		26/10/2005	02/06/2017	Published	Utility: Non-Provisional	0
COR-166	CORT P06	15/613,819		26/10/2005	05/06/2017	Published	Utility: Non-Provisional	0
COR-169	CORT P06	15/614,982		26/10/2005	06/06/2017	Published	Utility: Non-Provisional	0
COR-174	CORT P06	15/628,171		26/10/2005	20/06/2017	Published	Utility: Non-Provisional	0
COR-175	CORT P06	15/628,178		26/10/2005	20/06/2017	Published	Utility: Non-Provisional	0
COR-182	CORT P06	15/637,674		26/10/2005	29/06/2017	Published	Utility: Non-Provisional	0
COR-191	CORT P07	15/252,790		26/10/2005	31/08/2016	Published	Utility: Non-Provisional	0
COR-191PCT	CORT P07	PCT/US16/50471		09/08/2016	07/09/2016	Pending	Utility: PCT	0
COR-193	CORT P07	15/265,117		26/10/2005	14/09/2016	Published	Utility: Non-Provisional	0
COR-193	CORT P07	PCT/US16/54634		08/08/2016	30/09/2016	Pending	Utility: PCT	0
COR-156	CORT P07	15/695,665		26/10/2005	05/09/2017	Pending	Utility: Non-Provisional	0
COR-157	CORT P07	15/698,317		26/10/2005	07/09/2017	Published	Utility: Non-Provisional	0
COR-158	CORT P07	15/700,893		26/10/2005	11/09/2017	Pending	Utility: Non-Provisional	0
COR-159	CORT P07	15/722,602		26/10/2005	02/10/2017	Pending	Utility: Non-Provisional	0
COR-160	CORT P07	15/722,608		26/10/2005	02/10/2017	Published	Utility: Non-Provisional	0
COR-198	CORT P08	15/810,532		26/10/2005	13/11/2017	Pending	Utility: Non-Provisional	0
COR-021	CORT P08	15/808,292		26/10/2005	09/11/2017	Pending	Utility: Non-Provisional	0
COR-150	CORT P08	15/625,187		26/10/2005	16/06/2017	Published	Utility: Non-Provisional	0
COR-185	CORT P08	15/641,830		26/10/2005	05/07/2017	Published	Utility: Non-Provisional	0
COR-176	CORT P08	15/647,888		26/10/2005	12/07/2017	Published	Utility: Non-Provisional	0
COR-179	CORT P08	15/667,188		26/10/2005	02/08/2017	Published	Utility: Non-Provisional	0
COR-180	CORT P08	15/684,377		26/10/2005	23/08/2017	Pending	Utility: Non-Provisional	0
COR-194	CORT P08	15/677,496		26/10/2005	15/08/2017	Pending	Utility: Non-Provisional	0
COR-186	CORT P08	15/802,890		26/10/2005	03/11/2017	Pending	Utility: Non-Provisional	0
COR-202	CORT P08	15/834,937		26/10/2005	07/12/2017	Pending	Utility: Non-Provisional	0
COR-203	CORT P08	15/820,731		26/10/2005	22/11/2017	Pending	Utility: Non-Provisional	0
COR-205	CORT P08	15/827,311		26/10/2005	30/11/2017	Pending	Utility: Non-Provisional	0
COR-200	CORT P08	15/818,081		26/10/2005	20/11/2017	Pending	Utility: Non-Provisional	0
COR-199	CORT P08	15/813,453		26/10/2005	15/11/2017	Pending	Utility: Non-Provisional	0
COR-211	CORT P09	62/528,745		05/07/2017		Unfiled	Utility: Non-Provisional	0
COR-212		62/530,215		09/07/2018		Unfiled	Utility: Provisional	0
COR-217		62/530,301		10/07/2018		Unfiled	Utility: Provisional	0
GLIA	CORT T09	87451487		16/05/2017	16/05/2017	Allowed	Trademark	0
CORTICA	CORT T09	77819467	4060486	03/09/2009	03/09/2009	Issued	Trademark	0
IMAGE2TEXT	CORT T09	77869156	4049830	10/11/2009	10/11/2009	Issued	Trademark	0

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Autonomous AI CORT T10	87698276	27/11/2017	27/11/2017	Pending	Trademark	0

נספח 27

התכתובת בין גב' אודינייב לבין עו"ד אגסי בעניין דו"ח פברואר 2018.

Annex 27

Correspondence between Mr. Odinaev and Adv. Agassi on the February 2018 Report.

Subject: RE: Updated docket
From: Or Agassi <or@enitiatives.biz>
To: 'Karina Odinaev' <karina.odinaev@cortica.com>
Cc: 'reuven' <reuven@enitiatives.biz>, 'Igal Raichelgauz' <igal.raichelgauz@cortica.com>
Date Sent: Thursday, March 8, 2018 11:20:42 PM GMT+02:00
Date Received: Thursday, March 8, 2018 11:20:37 PM GMT+02:00

Hi Karina,
In this case we mentioned several prior art items as references although the disclosure itself is stand-alone started as a provisional patent application.
Best regards,
Or

From: karina.odinaev@gmail.com [mailto:karina.odinaev@gmail.com] **On Behalf Of** Karina Odinaev
Sent: Thursday, March 8, 2018 9:22 PM
To: Adv. Or Agassi
Cc: reuven; Igal Raichelgauz
Subject: Re: Updated docket
On Mar 6, 2018 15:54, "Karina Odinaev" <karina.odinaev@cortica.com> wrote:

Hi Or,
I've been reviewing the docket you sent, and have the following question:
Cor179 appears as utility:non-provisional in the docket file. If I understand correctly, the actual application (attached) says
its CIP, I would expect the docket to show this as a CIP.
Am I missing something?
Thanks, Karina

On Sun, Feb 4, 2018 at 3:25 PM, Or Agassi <or@enitiatives.biz> wrote:

Hi Karina,
Pleasure- attached.
Best regards,
Or

From: karina.odinaev@gmail.com [mailto:karina.odinaev@gmail.com] **On Behalf Of** Karina Odinaev
Sent: Sunday, February 4, 2018 11:52 AM
To: Adv. Or Agassi
Cc: reuven
Subject: RE: Updated docket

Hi Or,
Could you please add the submission countries where applicable, and the status of office actions? (Ie how many OA we're
already handled for each application)
Thanks Karina

On Feb 4, 2018 11:29, "Karina Odinaev" <karina.odinaev@cortica.com> wrote:
Thank you!
On Feb 3, 2018 23:38, "Or Agassi" <or@enitiatives.biz> wrote:

Hi Karina,
Please see attached.
Best regards,
Or

From: karina.odinaev@gmail.com [mailto:karina.odinaev@gmail.com] **On Behalf Of** Karina Odinaev
Sent: Thursday, February 1, 2018 11:07 AM
To: Adv. Or Agassi
Subject: Updated docket

Hi Or,
Could you please send me an updated docket that includes the name, the submission/acceptance date, countries, type (provisional, continuation, etc), office actions status, IDS status and any additional info that will help me to better understand where the portfolio stands and plan for 2018.
Thanks Karina

נספח 28

COR-179 (בקשת פטנט אמריקאי מס' US20180018337A1).

Annex 28

COR-179 (American patent application no. US20180018337A1).

US 20180018337A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2018/0018337 A1**

Raichelgauz et al. (43) **Pub. Date: Jan. 18, 2018**

(54) **SYSTEM AND METHOD FOR PROVIDING CONTENT BASED ON CONTEXTUAL INSIGHTS**

(71) Applicant: **Cortica, Ltd.**, TEL AVIV (IL)

(72) Inventors: **Igal Raichelgauz**, Tel Aviv (IL); **Karina Odinaev**, Tel Aviv (IL); **Yehoshua Y. Zeevi**, Haifa (IL)

(73) Assignee: **Cortica, Ltd.**, TEL AVIV (IL)

(21) Appl. No.: **15/667,188**

(22) Filed: **Aug. 2, 2017**

Related U.S. Application Data

(63) Continuation-in-part of application No. 14/280,928, filed on May 19, 2014, which is a continuation-in-part of application No. 13/856,201, filed on Apr. 3, 2013, said application No. 14/280,928 is a continuation-in-part of application No. 13/624,397, filed on Sep. 21, 2012, now Pat. No. 9,191,626, which is a continuation-in-part of application No. 13/344,400, filed on Jan. 5, 2012, now Pat. No. 8,959,037, which is a continuation of application No. 12/434,221, filed on May 1, 2009, now Pat. No. 8,112,376, which is a continuation-in-part of application No. 12/084,150, filed on Apr. 7, 2009, now Pat. No. 8,655,801, which is a continuation-in-part of application No. 12/195,863, filed on Aug. 21, 2008, now Pat. No. 8,326,775, said application No. 13/624,397 is a continuation-in-part of application No. 12/195,863, filed on Aug. 21, 2008, now Pat. No. 8,326,775, which is a continuation-in-part of application No. 12/084,150, filed on Apr. 7, 2009, now Pat. No. 8,655,801, said application No. 13/624,397 is a continuation-in-part of application No. 12/084,150, filed on Apr. 7, 2009, now Pat. No. 8,655,801, filed as application No. PCT/IL2006/001235 on Oct. 26, 2006.

(60) Provisional application No. 62/370,726, filed on Aug. 4, 2016, provisional application No. 61/833,028, filed on Jun. 10, 2013, provisional application No. 61/766,016, filed on Feb. 18, 2013.

(30) **Foreign Application Priority Data**

Oct. 26, 2005	(IL)	171577
Jan. 29, 2006	(IL)	173409
Aug. 21, 2007	(IL)	185414

Publication Classification

(51) **Int. Cl.**

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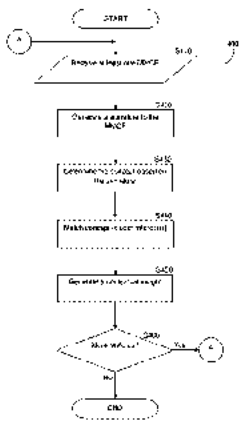
H04N 21/466	(2011.01)
H04N 21/2668	(2011.01)
H04N 21/258	(2011.01)
H04N 7/173	(2011.01)
H04L 29/08	(2006.01)
H04H 60/66	(2008.01)
H04H 60/56	(2008.01)
H04H 60/46	(2008.01)
H04H 60/37	(2008.01)
H04H 20/26	(2008.01)
H04N 21/81	(2011.01)
H04H 20/10	(2008.01)

(52) **U.S. Cl.**

CPC ... ***G06F 17/30056*** (2013.01); ***H04N 21/8106*** (2013.01); ***H04N 21/466*** (2013.01); ***H04N 21/2668*** (2013.01); ***H04N 21/25891*** (2013.01); ***H04N 7/17318*** (2013.01); ***H04H 20/103*** (2013.01); ***H04H 60/66*** (2013.01); ***H04H 60/56*** (2013.01); ***H04H 60/46*** (2013.01); ***H04H 60/37*** (2013.01); ***H04H 20/26*** (2013.01); ***H04L 67/10*** (2013.01)

(57) **ABSTRACT**

A system, method, and computer-readable medium for providing a content item based on a user interest and an expected action to be performed by a user device. The method includes: querying, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature; generating at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference; determining the expected action based on the at least one contextual insight; determining, based on the expected action, the content item to be provided to the user device; and providing the determined content item to the user device.



302

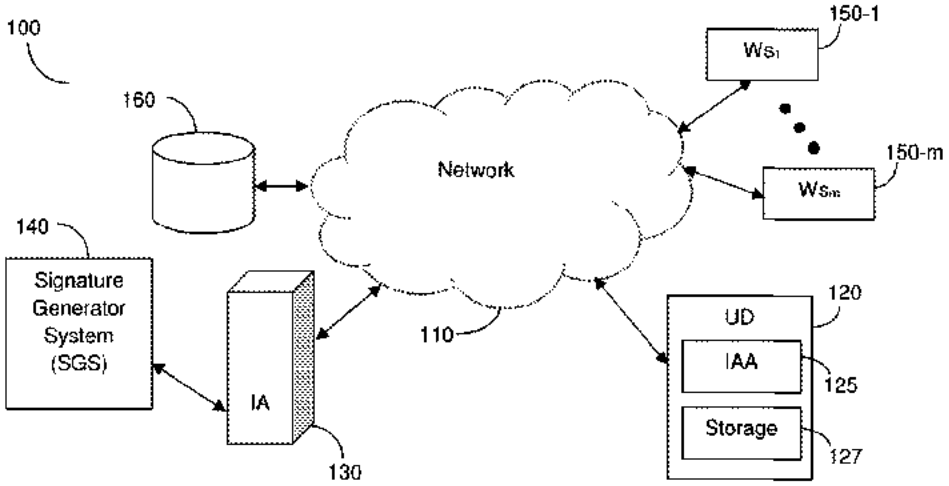

100
160
Network
150-1
Ws1
150-m
Wsm
140
Signature Generator System (SGS)
IA
130
110
120
UD
IAA
125
Storage
127

FIG. 1

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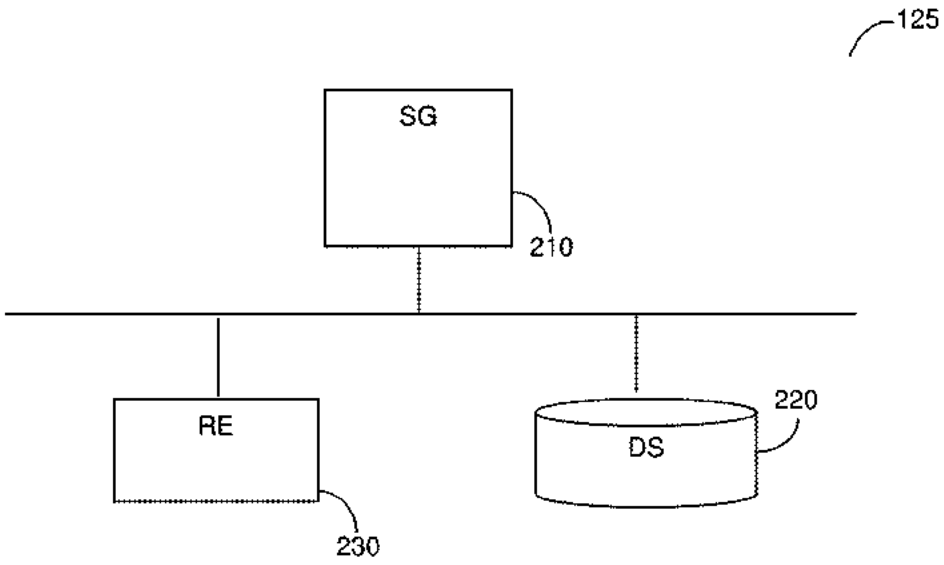

FIGURE 2

304

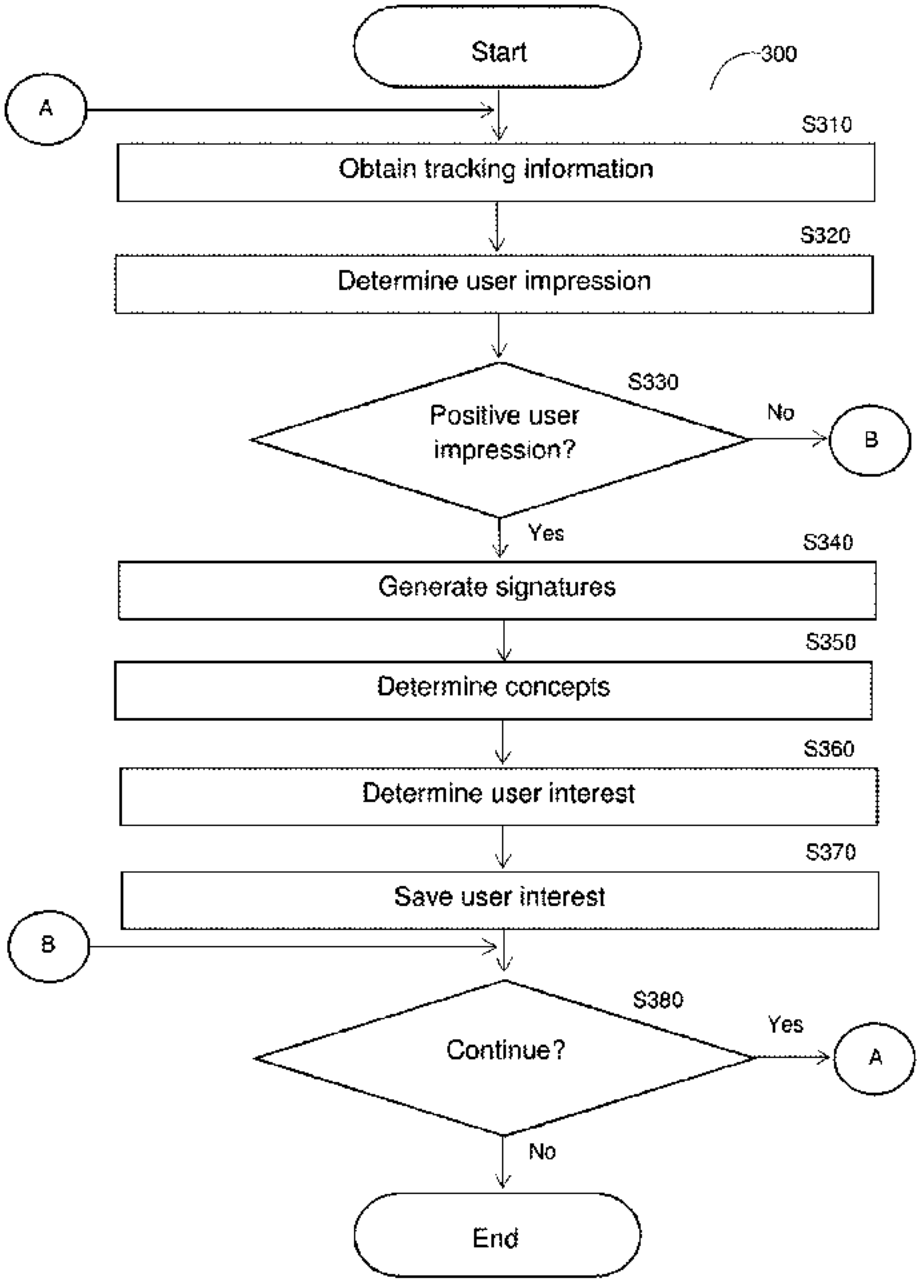
Start
300
A
S310
Obtain tracking information
S320
Determine user impression
S330
Positive user impression?
No
B
Yes
S340
Generate signatures
S350
Determine concepts
S360
Determine user interest
S370
Save user interest
B
S380
Continue?
Yes
A
No
End

FIG. 3

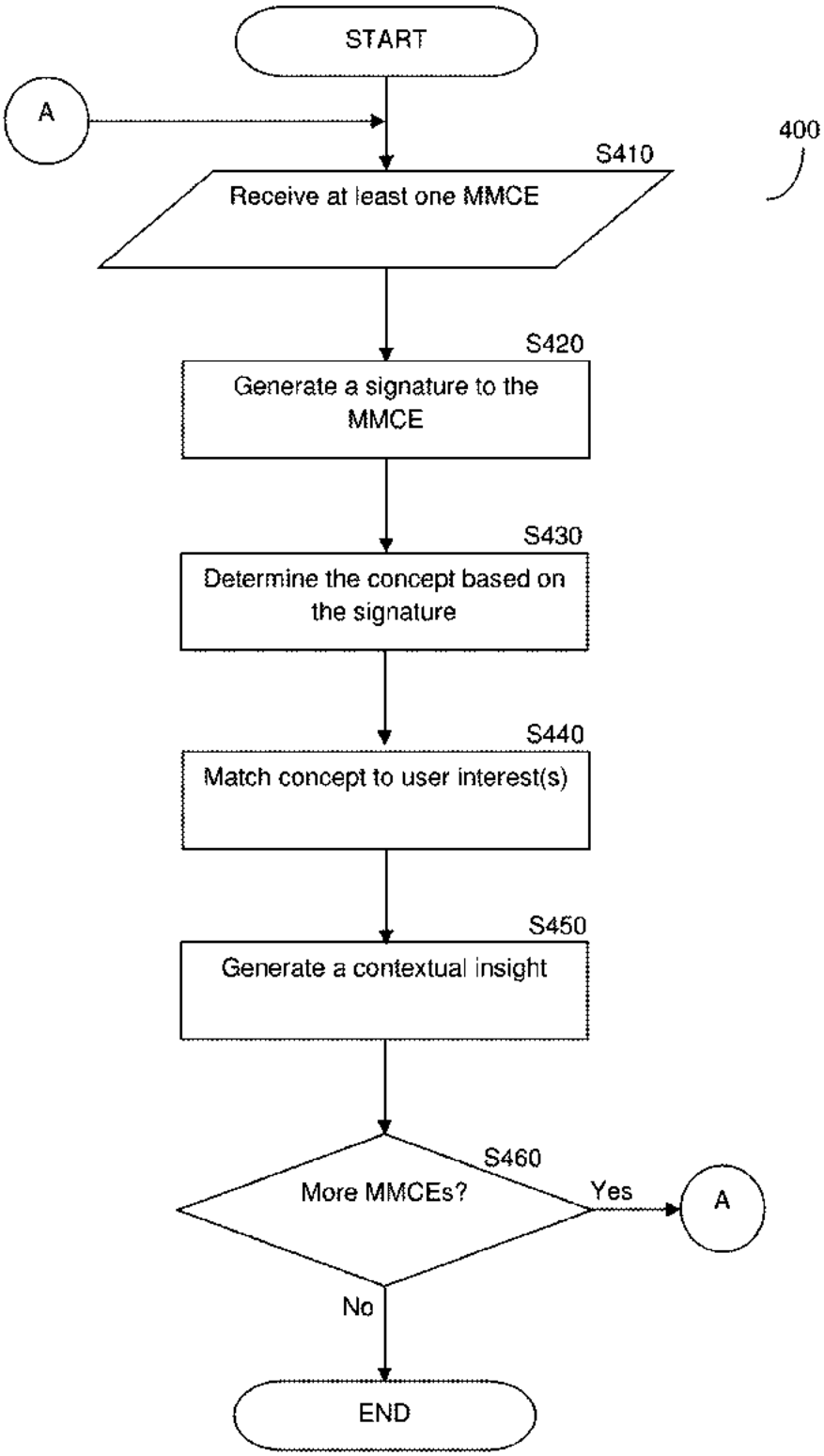
START
A
400
S410
Receive at least one MMCE
S420
Generate a signature to the MMCE
S430
Determine the concept based on the signature
S440
Match concept to user interest(s)
S450
Generate a contextual insight
S460
More MMCEs?
Yes
A
No
END

FIG. 4

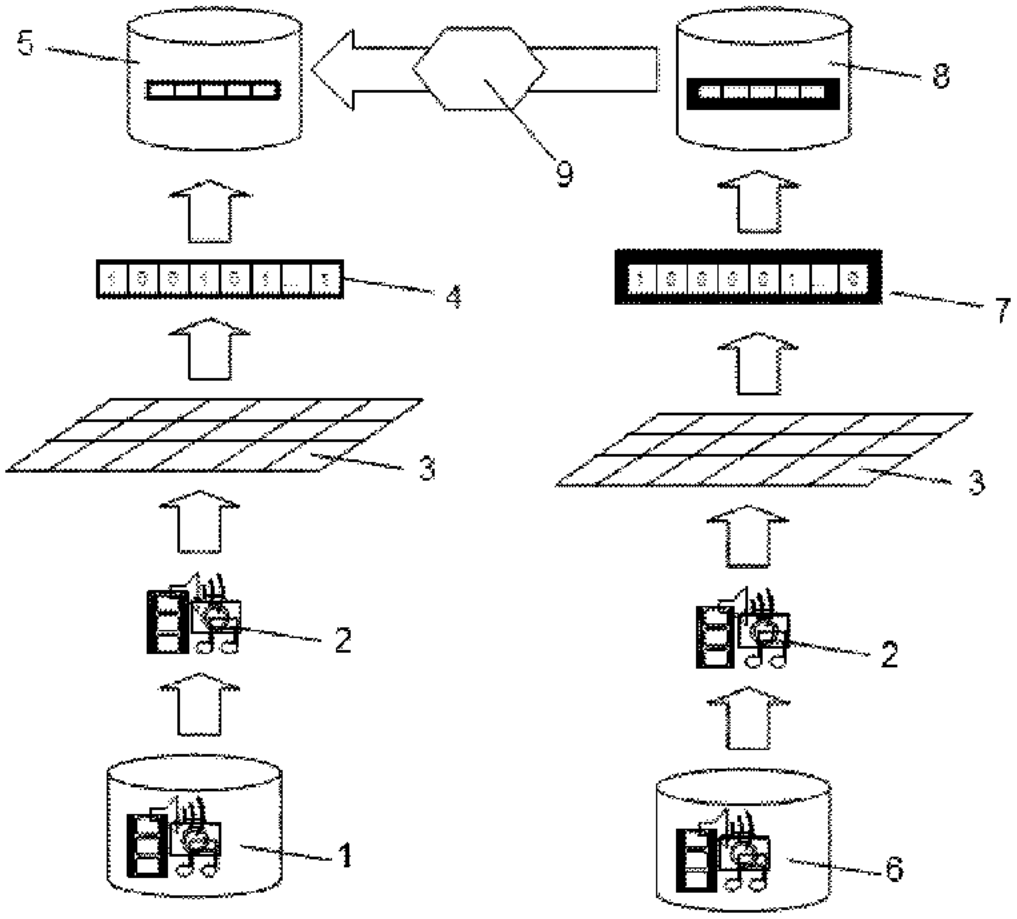

FIG. 5

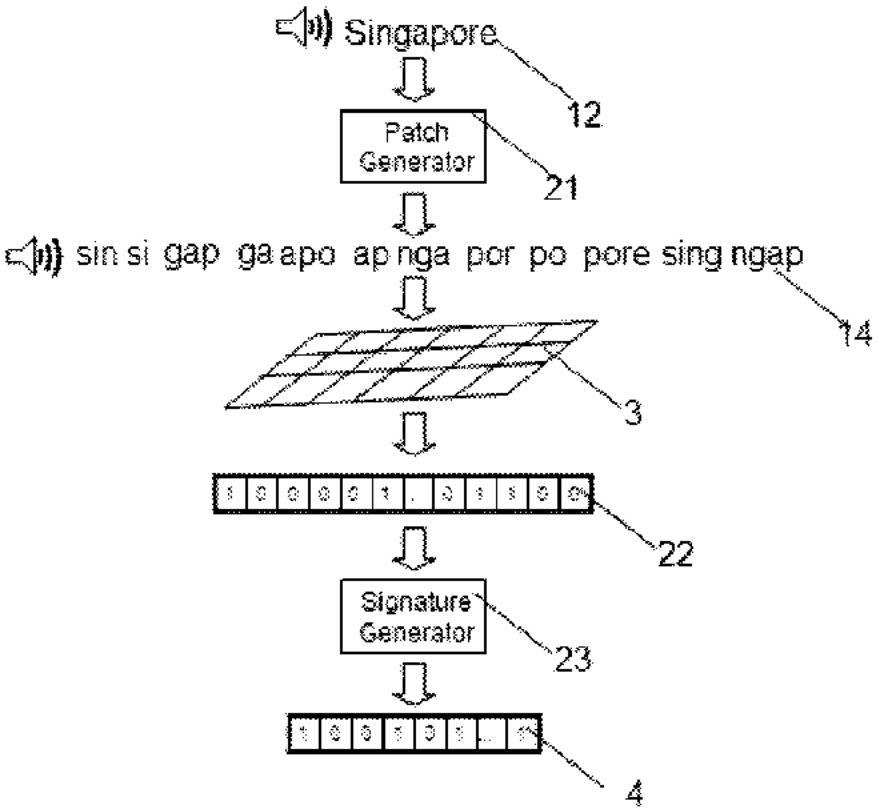
Singapore
12
Patch Generator
21
sin si gap ga apo ap nga por po pore sing ngap
14
3
22
Signature Generator
23
4

FIG. 6

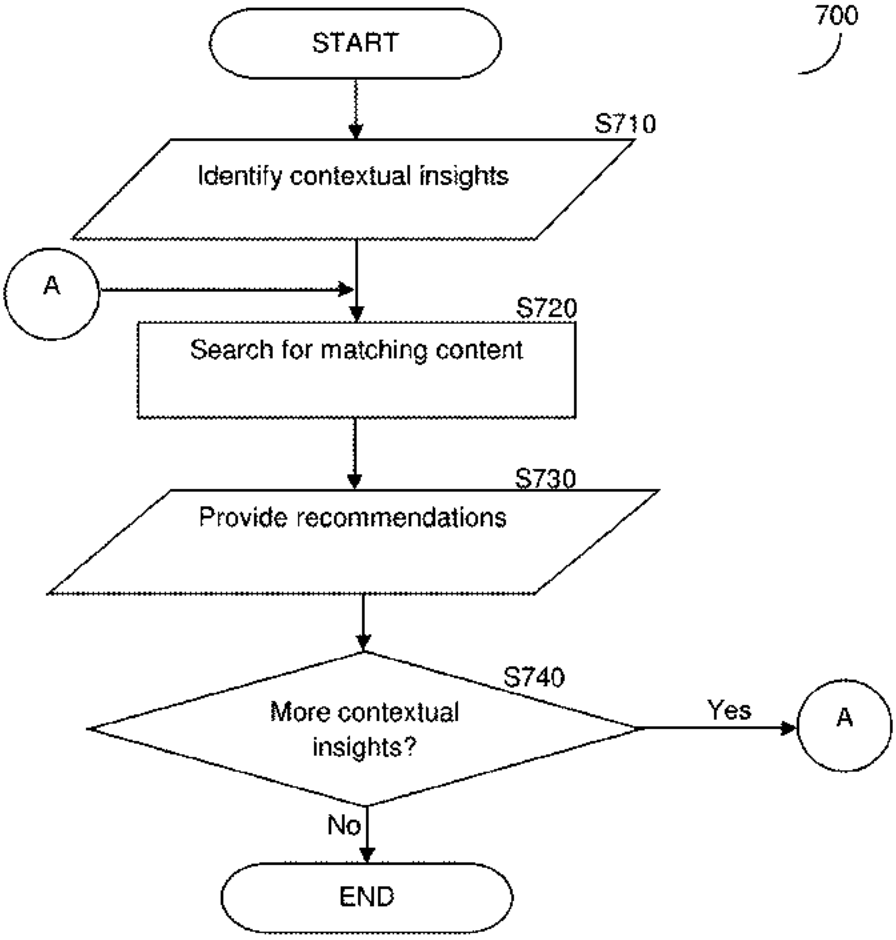
700
START
S710
Identify contextual insights
A
S720
Search for matching content
S730
Provide recommendations
S740
More contextual insights?
Yes
A
No
END

FIG. 7

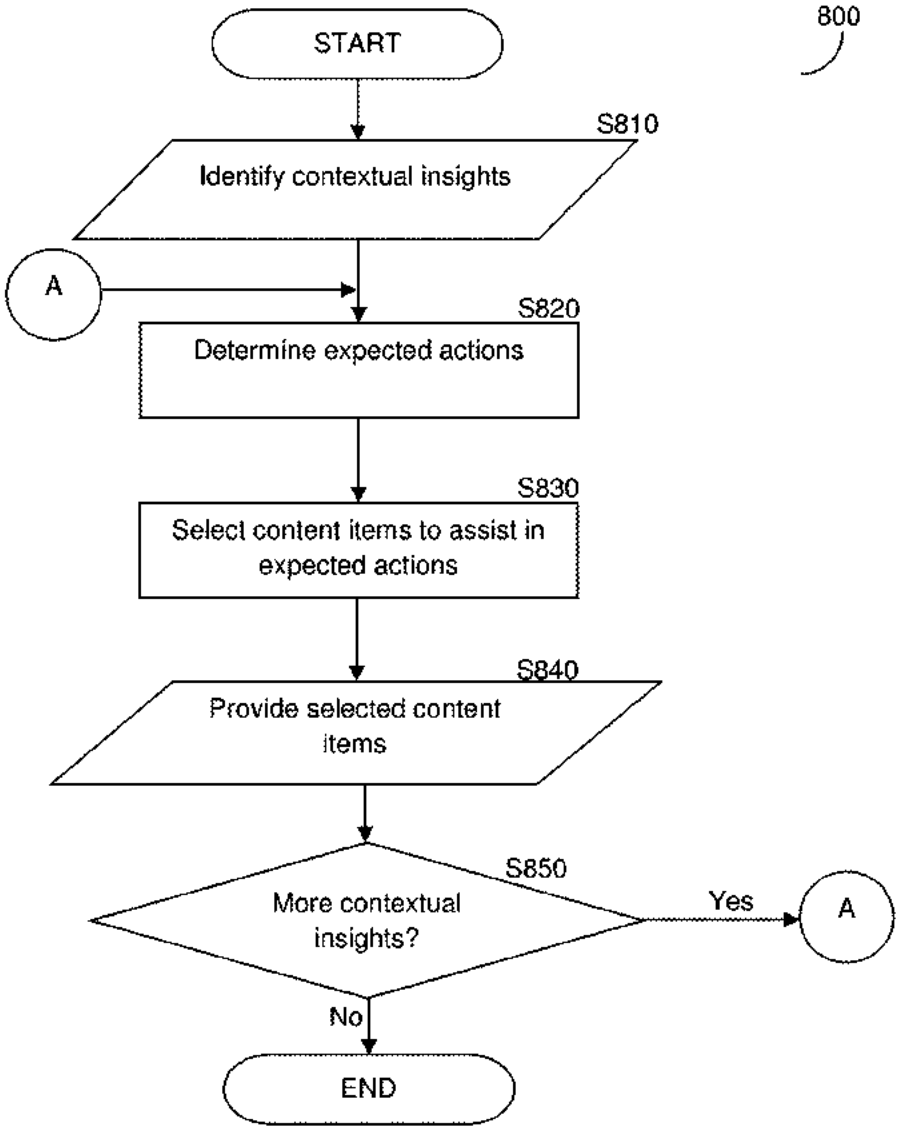
800
START
S810
Identify contextual insights
A
S820
Determine expected actions
S830
Select content items to assist in expected actions
S840
Provide selected content items
S850
More contextual insights?
Yes
A
No
END

FIG. 8

SYSTEM AND METHOD FOR PROVIDING CONTENT BASED ON CONTEXTUAL INSIGHTS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 62/370,726 filed on Aug. 4, 2016. This application is also a continuation-in-part of U.S. patent application Ser. No. 14/280,928 filed on May 19, 2014, now pending, which claims the benefit of U.S. Provisional Application No. 61/833,028 filed on Jun. 10, 2013. The Ser. No. 14/280,928 Application is also a continuation-in-part of U.S. patent application Ser. No. 13/856,201 filed on Apr. 3, 2013, now pending, which claims the benefit of U.S. Provisional Application No. 61/766,016 filed on Feb. 18, 2013. The Ser. No. 14/280,928 Application is also a continuation-in-part of U.S. patent application Ser. No. 13/624,397 filed on Sep. 21, 2012, now U.S. Pat. No. 9,191,626. The Ser. No. 13/624,397 Application is a continuation-in-part of:

[0002] (a) U.S. patent application Ser. No. 13/344,400 filed on Jan. 5, 2012, now U.S. Pat. No. 8,959,037, which is a continuation of U.S. patent application Ser. No. 12/434,221 filed on May 1, 2009, now U.S. Pat. No. 8,112,376. The Ser. No. 12/434,221 Application is a continuation-in-part of the below-referenced U.S. patent application Ser. Nos. 12/084,150 and 12/195,863;

[0003] (b) U.S. patent application Ser. No. 12/195,863 filed on Aug. 21, 2008, now U.S. Pat. No. 8,326,775, which claims priority under 35 U.S.C 119 from Israeli Application No. 185414, filed on Aug. 21, 2007, and which is also a continuation-in-part of the below-referenced U.S. patent application Ser. No. 12/084,150; and

[0004] (c) U.S. patent application Ser. No. 12/084,150 having a filing date of Apr. 7, 2009, now U.S. Pat. No. 8,655,801, which is the National Stage of International Application No. PCT/IL2006/001235 filed on Oct. 26, 2006, which claims foreign priority from Israeli Application No. 171577 filed on Oct. 26, 2005 and Israeli Application No. 173409 filed on Jan. 29, 2006.

[0005] All of the applications referenced above are herein incorporated by reference for all that they contain.

TECHNICAL FIELD

[0006] The present disclosure relates generally to the analysis of multimedia content, and more specifically to a system for providing content based on the analysis.

BACKGROUND

[0007] With the abundance of data made available through various means in general and the Internet and world-wide web (WWW) in particular, a need to understand the likes and dislikes of users has become essential for on-line businesses.

[0008] Existing solutions provide several tools to identify users' preferences. Some of these existing solutions actively require an input from the users to specify their interests. However, profiles generated for users based on their inputs may be inaccurate, as the users tend to provide only their current interests, or otherwise only provide partial information due to privacy concerns.

[0009] Other existing solutions passively track the users' activity through particular web sites such as social networks. The disadvantage with such solutions is that typically limited information regarding the users is revealed, as users tend to provide only partial information due to privacy concerns. For example, users creating an account on Facebook® often provide only the minimum information required for the creation of the account. Additional information about such users may be collected over time, but may take significant amounts of time (i.e., gathered via multiple social media or blog posts over a time period of weeks or months) to be useful for accurate identification of user preferences.

[0010] It would therefore be advantageous to provide a solution that overcomes the deficiencies of the prior art. It would be further advantageous if such solution further enables providing relevant content based on the analysis of multimedia content.

SUMMARY

[0011] A summary of several example embodiments of the disclosure follows. This summary is provided for the convenience of the reader to provide a basic understanding of such embodiments and does not wholly define the breadth of the disclosure. This summary is not an extensive overview of all contemplated embodiments, and is intended to neither identify key or critical elements of all embodiments nor to delineate the scope of any or all aspects. Its sole purpose is to present some concepts of one or more embodiments in a simplified form as a prelude to the more detailed description that is presented later. For convenience, the term "some embodiments" or "certain embodiments" may be used herein to refer to a single embodiment or multiple embodiments of the disclosure.

[0012] Certain embodiments disclosed herein include a method for providing a content item based on a user interest and an expected action to be performed by a user device. The method comprises: querying, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature; generating at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference; determining the expected action based on the at least one contextual insight; determining, based on the expected action, the content item to be provided to the user device; and providing the determined content item to the user device.

[0013] Certain embodiments disclosed herein include a non-transitory having stored thereon instructions for causing a processing system to perform a process for providing a content item based on a user interest and an expected action to be performed by a user device, the process comprising: querying, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature; generating at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference; determining the expected action based on the at least one contextual insight; determining, based on the

expected action, the content item to be provided to the user device; and providing the determined content item to the user device.

[0014] Certain embodiments disclosed herein include a system for providing a content item based on a user interest and an expected action to be performed by a user device, comprising: a processing circuitry; and a memory, wherein the memory contains instructions that, when executed by the processing circuitry, configure the system to: query, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature; generate at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference; determine the expected action based on the at least one contextual insight; determine, based on the expected action, the content item to be provided to the user device; and provide the determined content item to the user device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The subject matter disclosed herein is particularly pointed out and distinctly claimed in the claims at the conclusion of the specification. The foregoing and other objects, features, and advantages of the disclosed embodiments will be apparent from the following detailed description taken in conjunction with the accompanying drawings.

[0016] FIG. **1** is a network diagram utilized to describe the various disclosed embodiments.

[0017] FIG. **2** is a block diagram of an interest analyzer according to an embodiment.

[0018] FIG. **3** is flowchart illustrating a method for profiling user interests according to an embodiment.

[0019] FIG. **4** is a flowchart illustrating a method for generating contextual insights based on analysis of a user's interests and a multimedia content element according to another embodiment.

[0020] FIG. **5** is a block diagram depicting the basic flow of information in the signature generator system.

[0021] FIG. **6** is a diagram showing the flow of patches generation, response vector generation, and signature generation in a large-scale speech-to-text system.

[0022] FIG. **7** is a flowchart illustrating a method for providing recommendations for multimedia content elements to a user based on contextual insights according to an embodiment.

[0023] FIG. **8** is a flowchart illustrating a method for providing content items to a user based on expected actions according to an embodiment.

DETAILED DESCRIPTION

[0024] It is important to note that the embodiments disclosed herein are only examples of the many advantageous uses of the innovative teachings herein. In general, statements made in the specification of the present application do not necessarily limit any of the various claimed embodiments. Moreover, some statements may apply to some inventive features but not to others. In general, unless otherwise indicated, singular elements may be in plural and vice versa with no loss of generality. In the drawings, like numerals refer to like parts through several views.

[0025] Certain embodiments disclosed herein include a system and method for providing recommendations to users based on contextual insights. Contextual insights are generated based on a user profile of a user and a multimedia content element. The contextual insights are conclusions related to a current preference of the user. Generating the contextual insights further includes extracting a user profile from a database of user profiles and analyzing the multimedia content element. The database is created based on collection and storage of user interests. The analysis of the captured multimedia content element includes generating signatures to the multimedia content element. Based on the signatures, one or more concepts of the multimedia content element is determined. Based on an analysis of the concepts and the user interests of the user profile, one or more contextual insights is generated.

[0026] Based on the generated contextual insights, recommendations of multimedia content elements are provided to the user. The recommendations may include, but are not limited to, recommendations for multimedia content, recommendations for web sites or pages (via, e.g., a hyperlink to a web page), recommendations for topics of interest (to be, e.g., to be utilized as a query or to customize a user profile), combinations thereof, and the like.

[0027] As a non-limiting example, if a user captured an image determined as a self-portrait photograph (typically referred to as a "selfie") and the user interest is determined as fashion, links through which the user can purchase clothing items that fit the user's size or preferences are provided to the user, for example by sending the recommended links to the user's device.

[0028] A user interest may be determined, in part, based on the period of time the user viewed or interacted with the multimedia content elements; a gesture received by the user device such as a mouse click, a mouse scroll, a tap, and any other gesture on a device having, e.g., a touch screen display or a pointing device; content viewed by the user device; and the like. User interests may further be generated at least partially based on personal parameters associated with the user, for example, demographic information related to the user. The personal parameters may be identified in, e.g., a user profile associated with the user.

[0029] According to another embodiment, a user interest may be determined based on a match between multimedia content elements viewed by a user and their respective impressions. According to yet another embodiment, a user interest may be generated based on multimedia content elements that the user uploads or shares on the web, such as social networking websites. It should be noted that the user interest may be determined based on one or more of the above identified techniques.

[0030] FIG. 1 shows is an example network diagram **100** utilized to describe the various disclosed embodiments. As illustrated in FIG. **1**, a network **110** enables the communication between a user device (UD) **120**, an interest analyzer (IA) **130**, a plurality of web sources **150**-1 through **150**-*m* (hereinafter referred to individually as a web source **150** and collectively as web sources **150**), and a database **160**. The network **110** may be the Internet, the world-wide-web (WWW), a local area network (LAN), a wide area network (WAN), a metro area network (MAN), and other networks capable of enabling communication between the elements of the network diagram **100**.

[0031] The user device **120** may be, for example, a personal computer (PC), a personal digital assistant (PDA), a

mobile phone, a tablet computer, a smart phone, a wearable computing device, and the like.

[0032] In some implementations, the user device **120** may have installed therein an interest analyzer agent (IAA) **125**. The interest analyzer agent **125** may be a dedicated application, script, or any program code stored in a memory of the user device **120** and is executable, for example, by a processing circuitry (e.g., a microprocessor) of the user device **120**. The interest analyzer agent **125** may be configured to perform some or all of the processes performed by an interest analyzer **130** that are disclosed herein.

[0033] The user device **120** may include a local storage **127**. The local storage **127** may include multimedia content elements captured or received by the user device **120**. For example, the local storage **127** may include photographs and videos either captured via a camera (not shown) of the user device **120** or downloaded from a website (e.g., via the network **110**).

[0034] The user device **120** is configured to send multimedia content elements to the interest analyzer **130** via the network **110**. The content displayed on the user device **120** may be downloaded from one of the web sources **150**, may be embedded in a web-page displayed on the user device **120**, or a combination thereof. The uploaded multimedia content element can be locally saved in the user device **120** or can be captured by the user device **120**. For example, the multimedia content element may be an image captured by a camera installed in the user device **120**, a video clip downloaded to and saved in the user device **120**, and so on. A multimedia content element may be, for example, an image, a graphic, a video stream, a video clip, an audio stream, an audio clip, a video frame, a photograph, an image of signals (e.g., spectrograms, phasograms, scalograms, etc.), portions thereof, or combinations thereof.

[0035] Each of the web sources **150** may be, for example, a web server, an application server, a data repository, a database, a website, an e-commerce website, a content website, and the like. The web sources **150** include or store multimedia content elements utilized for generating contextual insights. Alternatively or collectively, the multimedia content elements utilized for generating contextual insights may be stored in the local storage **127** of the user device **120**, a storage of the interest analyzer **130**, or both.

[0036] The various embodiments disclosed herein may be realized using the interest analyzer **130** and a signature generator system (SGS) **140**. The interest analyzer **130** is configured to create user profiles for user devices including a profile for the user of the user device **120** as will be discussed below.

[0037] The SGS **140** is configured to generate signatures for multimedia content elements as explained in more detail herein below with respect to FIGS. **5** and **6**. Each of the interest analyzer **130** and the SGS **140** typically includes a processing system, such as a processing circuitry (not shown) that is communicatively connected to a memory. The memory contains instructions that can be executed by the processing circuitry. The interest analyzer **130** also includes an interface (not shown) to the network **110**. In some implementations, the SGS **140** may be integrated in the interest analyzer **130**. The interest analyzer **130**, the SGS **140**, or both may also include a plurality of computational cores having properties that are at least partly statistically independent from other cores of the plurality of computational cores. The computational cores may be utilized to generate signatures as further discussed herein below.

[0038] Each signature represents a concept, where a concept is a collection of signatures and metadata representing the concept. Utilizing the signatures to determine contextual insights allows for more accurate contextual insights than, for example, based on metadata of multimedia content elements alone. Further, the signatures generated as described herein may result in more accurate analysis of multimedia content features than, for example, existing image analysis solutions. In particular, the signatures may be robust to noise and distortion.

[0039] In an example implementation, a tracking agent (not shown) or other means for collecting information through the user device **120** may be configured to provide the interest analyzer **130** with tracking information related to a multimedia content element viewed or uploaded by the user and related to the interaction of the user with the multimedia content element. The information may include, but is not limited to, the multimedia content element (or a URL referencing the multimedia content element), the amount of time the user viewed the multimedia content element, a user gesture made with respect to the multimedia content element, a URL of a webpage in which the element was viewed or uploaded to, a combination thereof, and so on. The tracking information is provided for each multimedia content element viewed on or uploaded via the user device **120**.

[0040] The interest analyzer **130** is configured to determine a user impression with respect to the received tracking information. The user impression may be determined for each multimedia content element or for a group of multimedia content elements. As noted above, the user impression indicates the user's attention with respect to a multimedia content element or group of multimedia content elements. A user impression may be determined based on, but not limited to, a click on an element, a scroll, hovering over an element with a mouse, a change in volume, one or more key strokes, and so on. The user impression may further be determined to be either positive (i.e., demonstrating that a user is interested in the impressed element) or negative (i.e., demonstrating that a user is not particularly interested in the impressed element). A filtering operation may be performed on the tracking information in order to remove details that are not helpful in determining user impressions and to analyze only meaningful impressions. Impressions may be determined as meaningless and thereby ignored, if, for example, a value associated with the impression is below a predefined threshold.

[0041] For example, in an embodiment, if the user hovered over the element using his mouse for a very short time (e.g., less than 0.5 seconds), then such a measure is ignored. To this end, in a further embodiment, the interest analyzer **130** is configured to compute a quantitative measure for the impression. To this end, for each input measure that is tracked by the tracking agent, a predefined number may be assigned. For example, a dwell time over the multimedia content element of 2 seconds or less may be assigned with a '5'; whereas a dwell time of over 2 seconds may be assigned with the number '10'. A click on the element may increase the value of the quantitative measure by assigning another quantitative measure of the impression. After one or more input measures of the impression have been made, the numbers related to the input measures provided in the

tracking information are accumulated. The total of these input measures is the quantitative measure of the impression. Thereafter, the interest analyzer **130** is configured to compare the quantitative measure to a predefined threshold, and if the number exceeds the threshold, the impression is determined to positive. In a further embodiment, the input measure values may be weighted.

[0042] For example, if a user hovers over the multimedia content element for less than 2 seconds but then clicks on the element, the score may be increased from 5 to 9 (i.e., the click may add 4 to the total number). In that example, if a user hovers over the multimedia content element for more than 2 seconds and then clicks on the element, the score may be increased from 10 to 14. In some embodiments, the increase in score may be performed relative to the initial size of the score such that, e.g., a score of 5 will be increased less (for example, by 2) than a score of 10 would be increased (for example, by 4).

[0043] The multimedia content element or elements that are determined as having a positive user impression are sent to the SGS **140**. The SGS **140** is then configured to generate signatures for each multimedia content element or for each portion thereof. The generated signature(s) may be robust to noise and distortions as discussed below.

[0044] It should be appreciated that the signatures may be used for profiling the user's interests, because signatures typically allow for more accurate reorganization of multimedia content elements in comparison than, for example, utilization of metadata. The signatures generated by the SGS **140** for the multimedia content elements allow for recognition and classification of multimedia content elements such as content-tracking, video filtering, multimedia taxonomy generation, video fingerprinting, speech-to-text, audio classification, element recognition, video/image search and any other application requiring content-based signatures generation and matching for large content volumes such as, web and other large-scale databases. For example, a signature generated by the SGS **140** for a picture showing a car enables accurate recognition of the model of the car from any angle at which the picture was taken.

[0045] In an embodiment, the generated signatures are matched against a database of concepts (not shown) to identify a concept that can be associated with the signature and, thus, with the multimedia content element. For example, an image of a tulip would be associated with a concept of flowers. A concept (or a matching concept) is a collection of signatures representing a multimedia content element and metadata describing the concept. The collection of signatures is a signature reduced cluster generated by inter-matching signatures generated for the multimedia content elements. The techniques for generating concepts and a concept-based database are disclosed in U.S. Pat. No. 9,031,999, assigned to the common assignee, which is hereby incorporated by reference.

[0046] Based on the identified concepts, the interest analyzer **130** is configured to create or update the user profile. That is, for each user, when a number of similar of identical concepts for multiple multimedia content elements have been identified over time, the user's preference or interest can be established. The interest may be saved to a user profile created for the user. Whether two concepts are sufficiently similar or identical may be determined by, e.g., performing concept matching between the concepts. A matching concept may be represented using at least one signature. Techniques for concept matching are disclosed in U.S. Pat. No. 9,639,532, assigned to common assignee, which is hereby incorporated by reference.

[0047] For example, a concept of flowers may be determined as associated with a user interest in 'flowers' or 'gardening.' In one embodiment, the user interest may simply be the identified concept. In another embodiment, the interest may be determined using an association table which associates one or more identified concepts with a user interest. For example, the concepts of 'flowers' and 'spring' may be associated with the interest of 'gardening'. Such an association table may be maintained in the interest analyzer **130** or in the database **160**.

[0048] In an embodiment, the interest analyzer **130** is further configured to generate a contextual insight based on the user's interest and on the analysis of the multimedia content element. Contextual insights are conclusions determined with respect to a current preference of users. Upon receiving at least one multimedia content element from the user device **120**, at least one signature is generated for the received multimedia content element. The interest analyzer **130** is configured to determine a concept based on a concept represented by the at least one generated signature.

[0049] The interest analyzer **130** queries the user profile stored in the database **160** to determine at least one user interest based on the determined concept. Based on a response to the query, the interest analyzer **130** is configured to generate a contextual insight for the at least one user interest and the at least one signature.

[0050] In an embodiment, the interest analyzer **130** is configured to provide content related to the current user interest. To this end, the interest analyzer **130** is configured to determine one or more expected actions that the user of the user device **120** is interested in performing. Each action may be, for example, a certain request for communication, e.g., voice call request, text message, etc. The request may further be a request for content, e.g., launching a certain web-page, launching a certain application program, etc. According to another embodiment, the action may be a utility initialization, e.g., initializing a flashlight of the user device **120**, muting alerts of the user device **120**, etc. The interest analyzer **130** is configured to search for one or more content items that can assist in the expected actions. The interest analyzer **130** is configured to assist in the expected actions by providing one or more of the content items found during the search.

[0051] As a non-limiting example, in case a contextual insight indicates that the user interest in ordering a taxi to the user's current location, an application program for ordering a taxi, e.g., Uber® is launched on the user device **120**. The search may include querying one or more of the plurality of web sources **150** based on the contextual insight indicating interest in a taxi. The Uber® application, found during the search, may be sent to the user device **120** and caused to be executed.

[0052] It should be noted that certain tasks performed by the interest analyzer **130** and the SGS **140** may be carried out, alternatively or collectively, by the user device **120** and the interest analyzer agent **125**. Specifically, in an embodiment, signatures may be generated by a signature generator (not shown in FIG. **1**) of the user device **120**. The interest analyzer agent **125** may be configured to generate contextual insights and to search for content items matching the contextual insights. The interest analyzer agent **125** may be

further configured to identify matching content items and to cause a display of the matching content items on the user device **120** as recommendations. An example block diagram of an interest analyzer agent **125** installed on a user device **120** is described further herein below with respect to FIG. **2**.

[0053] It should further be noted that the signatures may be generated for multimedia content elements stored in the web sources **150**, in the local storage **127** of the user device **120**, or a combination thereof.

[0054] FIG. **2** depicts an example block diagram of an interest analyzer agent **125** installed on the user device **120** according to an embodiment. The interest analyzer agent **125** may be configured to access an interface of a user device or a server. The interest analyzer agent **125** is further communicatively connected to a processing circuitry (e.g., a processing circuitry of the user device **120**, not shown) such as a processor and to a memory (e.g., a memory of the user device **120**, not shown). The memory contains instructions that, when executed by the processing circuitry, configures the interest analyzer agent **125** as further described herein. The interest analyzer agent **125** may further be communicatively connected to a storage unit (e.g., the storage **127** of the user device **120**, not shown) including a plurality of multimedia content elements.

[0055] In an embodiment, the interest analyzer agent **125** includes a signature generator (SG) **210**, a data storage (DS) **220**, and a recommendations engine **230**. The signature generator **210** may be configured to generate signatures for multimedia content elements. In a further embodiment, the signature generator **210** includes a plurality of computational cores as discussed further herein above, where each computational core is at least partially statistically independent of the other computations cores.

[0056] The data storage **220** may store a plurality of multimedia content elements, a plurality of concepts, signatures for the multimedia content elements, signatures for the concepts, or a combination thereof. In a further embodiment, the data storage **220** may include a limited set of concepts relative to a larger set of known concepts. Such a limited set of concepts may be utilized when, for example, the data storage **220** is included in a device having a relatively low storage capacity such as, e.g., a smartphone or other mobile device, or otherwise when lower memory use is desirable.

[0057] The recommendations engine **230** may be configured to generate contextual insights based on multimedia content elements related to the user interest, to query sources of information (including, e.g., the data storage **220** or another data source), and to cause execution or display of recommended content items on the user device **120**.

[0058] In an embodiment, the interest analyzer agent **125** is configured to receive one or more multimedia content element. The interest analyzer agent **125** is configured to initialize the signatures generator **210** to generate signatures for the multimedia content element. The interest analyzer agent **125** is further configured to query a user profile of the user stored in the data storage **220** to determine a user interest and to generate a contextual insight based on the user interest and the signatures. Based on the contextual insight, the recommendations engine **230** is initialized to search for one or more content items that match the contextual insight. The matching content items may be provided by the recommendations engine **230** to the user as recommendations via the interface.

[0059] Each of the recommendations engine **230** and the signature generator **210** can be implemented with any combination of general-purpose microprocessors, multi-core processors, microcontrollers, digital signal processors (DSPs), field programmable gate array (FPGAs), programmable logic devices (PLDs), controllers, state machines, gated logic, discrete hardware components, dedicated hardware finite state machines, or any other suitable entities that can perform calculations or other manipulations of information.

[0060] In certain implementations, the recommendation engine **230**, the signature generator **210**, or both can be implemented using an array of computational cores having properties that are at least partly statistically independent from other cores of the plurality of computational cores. The computational cores are further discussed below.

[0061] According to another implementation, the processes performed by the recommendation engine **230**, the signature generator **210**, or both, can be executed by a processing circuitry of the user device **120** or of the interest analyzer **130**. Such processing system may include machine-readable media for storing software. Software shall be construed broadly to mean any type of instructions, whether referred to as software, firmware, middleware, microcode, hardware description language, or otherwise. Instructions may include code (e.g., in source code format, binary code format, executable code format, or any other suitable format of code). The instructions, when executed by the one or more processors, cause the processing system to perform the various functions described herein.

[0062] It should be noted that, although FIG. **2** is described with respect to an interest analyzer agent **125** included in the user device **120**, any or all of the components of the interest analyzer agent **125** may be included in another system or systems (e.g., the interest analyzer **130**, the signature generator system **140**, or both) and utilized to perform some or all of the tasks described herein without departing from the scope of the disclosure. As an example, the interest analyzer agent **125** operable in the user device **120** may send multimedia content elements to the signature generator system **140** and may receive corresponding signatures therefrom. As another example, the user device **120** may send signatures to the interest analyzer **130** and may receive corresponding recommendations or concepts therefrom. As yet another example, the interest analyzer agent **125** may be included in the interest analyzer **130** and may provide recommendations to the user device **120** based on multimedia content elements identified by or received from the user device **120**.

[0063] FIG. **3** depicts an example flowchart **300** illustrating a method for creating user profiles according to an embodiment. It should be noted that, in an embodiment, tracking information is collected by a user device. In various embodiments, tracking information may be collected from other sources such as, e.g., a database. In an embodiment, the method may be performed by a server (e.g., the interest analyzer **130**).

[0064] At S**310**, tracking information of a user device is obtained (e.g., the user device **120**-**1**). In an embodiment, the obtained tracking information may be received from, e.g., an agent installed on the user device and configured to collect tracking information. In a further embodiment, S**310** may include filtering the tracking information. As noted above, the tracking information is collected with respect to a

multimedia content element displayed over the user device. In an embodiment, the tracking information may include, but is not limited to, the multimedia content element (or a link thereto) displayed on the user device and user gestures with respect to displayed multimedia content element. In an embodiment, the tracking information may be collected via a web browser executed by the user device.

[0065] At S320, one or more user impressions is determined based on the obtained tracking information. Each user impression may be assigned a score based on a value of the user gestures utilized to determine the user impression. The score may further be positive or negative. In an embodiment, S320 may include filtering the user impressions so as to only determine meaningful impressions. The filtering may include, for example, filtering out any user impressions associated with a score that is below a predefined threshold.

[0066] The user impressions may be determined based on user gestures such as, but not limited to, a click on an element, a scroll, hovering over an element with a mouse, a change in volume, one or more key strokes, a combination thereof, and so on. The user impressions may further be determined to be either positive (i.e., demonstrating that a user is interested in the impressed element) or negative (i.e., demonstrating that a user is not particularly interested in the impressed element). One embodiment for determining the user impression is described herein above. The user impression is determined for one or more multimedia content elements identified in the tracking information.

[0067] At S330, it is checked if any of the user impressions are positive and, if so, execution continues with S340; otherwise, execution continues with S380. Whether a user impression is positive is discussed further herein above with respect to FIG. 1.

[0068] At S340, signatures are generated for each multimedia content element that is associated with a positive user impression. As noted above, the tracking information may include the actual multimedia content element or a link thereto. In the latter case, the multimedia content element is first retrieved from its location. The signatures for the multimedia content element may be generated by a signature generator system (e.g., the SGS 140) as described further herein below.

[0069] At S350, one or more concepts related to the multimedia content elements associated with positive user impressions is determined. In an embodiment, S350 includes querying a concept-based database using the generated signatures. In a further embodiment, S350 may include matching the generated signatures to at least one signature associated with concepts in the concept-based database. In yet a further embodiment, each of the concepts may be associated with one or more particular portions of the multimedia content element. As an example, a multimedia content element image of a man wearing a baseball shirt may be associated with the concept "baseball fan," and the portions of the image related to the man may be associated with the concept "man" and the portions of the image related to the shirt may be associated with the concept "sports clothing" or "baseball."

[0070] At S360, based on the determined concepts, the user interest is determined. Determining the user interest may include, but is not limited to, identifying a positive user impression with respect to any of the concepts. In an embodiment, the user interest may be further determined with respect to particular portions of the multimedia content element and user gestures related to those particular portions. For example, if a multimedia content element is an image showing a dog and a cat, a click on a portion of the image showing the dog may indicate a positive impression (and, therefore, a user interest), in "dogs" but not necessarily a user interest in "cats."

[0071] As a non-limiting example of determining user interest, the user views a web-page that contains an image of a car. The image is then analyzed and a signature is generated respective thereto. As it appears that the user spent time above a certain threshold viewing the image of the car, the user's impression is determined as positive. It is therefore determined that a user interest is "cars."

[0072] At S370, the determined user interest is saved as part of a user profile for the user in a database (e.g., the database 160). It should be noted that if no user profile for the user exists in the database, a user profile may be created for the user. A unique user profile may be created for each user of a user device. The user may be identified by a unique identification number assigned, for example, by the tracking agent. The unique identification number typically does not reveal the user's identity. Each user profile can be updated over time as additional tracking information is gathered and analyzed by the server. In an embodiment, the interest analyzer 130 analyzes the tracking information only when a sufficient amount of additional tracking information has been collected.

[0073] At S380, it is determined whether additional tracking information is received and, if so, execution continues with S310; otherwise, execution terminates. As noted above, in an embodiment, S380 may include determining whether a sufficient amount of additional tracking information has been received.

[0074] As a non-limiting example, tracking information including a video featuring a cat playing with a toy and a cursor hovering over the cat for 20 seconds is obtained from an agent installed on a user device. Based on the tracking information and, specifically, the cursor hovering over the cat for more than 5 seconds, it is determined that a user impression of the video is positive. A signature is generated for the video, and a concept of "cats" is determined. Based on the positive user impression of the concept of "cats," a user interest in "cats" is determined. The user interest is saved as part of a user profile of the user.

[0075] FIG. 4 depicts an example flowchart 400 illustrating a method for generating contextual insights according to another embodiment.

[0076] At S410, at least one multimedia content element is received. The multimedia content elements may be, for example, an image, a graphic, a video stream, a video clip, an audio stream, an audio clip, a video frame, a photograph, an image of signals (e.g., spectrograms, phasograms, scalograms, etc.), combinations thereof, or portions thereof. The at least one multimedia content element may be captured by a sensor included in a user device (e.g., the user device 120).

[0077] At S420, at least one signature is generated for each received multimedia content element. The signatures for the multimedia content elements are typically generated by a SGS (e.g., the SGS 140) as described hereinabove.

[0078] At optional S430, at least one concept is determined for each generated signature. In an embodiment, S430 includes querying a concept-based database using the generated signatures. In a further embodiment, the generated signatures are matched to signatures representing concepts

stored in the concept-based database, and concepts associated with matching the generated signatures above a predetermined threshold may be determined.

[0079] At S440, the determined concepts are matched to user interests associated with the user. The user interests may be extracted from a user profile stored in a database (e.g., the database **160**). In an embodiment, matching the concepts to the user interests may include matching signatures representing the determined concepts to signatures representing the user interests.

[0080] At S450, at least one contextual insight is generated based on a match between the user interest and the concept(s) or signature(s). The contextual insights are conclusions related to a preference of the user. For example, if a user interest is "motorcycles" and a concept related to multimedia content elements viewed by the user is "red vehicles," a contextual insight may be a user preference for "red motorcycles." As another example, if a user interest is "shopping" and a concept related to multimedia content elements viewed by the user is "located in Las Vegas, Nev.," a contextual insight may be a preference for shopping outlets in Las Vegas, Nev.

[0081] At S460, it is checked whether additional multimedia content elements are received and, if so, execution continues with S410; otherwise, execution terminates.

[0082] FIGS. **5** and **6** illustrate the generation of signatures for the multimedia content elements by the SGS **140** according to one embodiment. An exemplary high-level description of the process for large scale matching is depicted in FIG. **5**. In this example, the matching is for a video content.

[0083] Video content segments **2** from a Master database (DB) **6** and a Target DB **1** are processed in parallel by a large number of independent computational Cores **3** that constitute an architecture for generating the Signatures (hereinafter the "Architecture"). Further details on the computational Cores generation are provided below. The independent Cores **3** generate a database of Robust Signatures and Signatures **4** for Target content-segments **5** and a database of Robust Signatures and Signatures **7** for Master content-segments **8**. An exemplary and non-limiting process of signature generation for an audio component is shown in detail in FIG. **6**. Finally, Target Robust Signatures and/or Signatures are effectively matched, by a matching algorithm **9**, to Master Robust Signatures and/or Signatures database to find all matches between the two databases.

[0084] To demonstrate an example of signature generation process, it is assumed, merely for the sake of simplicity and without limitation on the generality of the disclosed embodiments, that the signatures are based on a single frame, leading to certain simplification of the computational cores generation. The Matching System is extensible for signatures generation capturing the dynamics in-between the frames.

[0085] The Signatures' generation process is now described with reference to FIG. **6**. The first step in the process of signatures generation from a given speech-segment is to break down the speech-segment to K patches **14** of random length P and random position within the speech segment **12**. The breakdown is performed by the patch generator component **21**. The value of the number of patches K, random length P and random position parameters is determined based on optimization, considering the tradeoff between accuracy rate and the number of fast matches required in the flow process of the interest analyzer **130** and SGS **140**. Thereafter, all the K patches are injected in parallel into all computational Cores **3** to generate K response vectors **22**, which are fed into a signature generator system **23** to produce a database of Robust Signatures and Signatures **4**.

[0086] In order to generate Robust Signatures, i.e., Signatures that are robust to additive noise L (where L is an integer equal to or greater than 1) by the Computational Cores **3**, a frame 'i' is injected into all the Cores **3**. Then, Cores **3** generate two binary response vectors: $\vec{S}$ which is a Signature vector, and $\vec{RS}$ which is a Robust Signature vector.

[0087] For generation of signatures robust to additive noise, such as White-Gaussian-Noise, scratch, etc., but not robust to distortions, such as crop, shift and rotation, etc., a core $C_i=\{n_i\}$ $(1\leq i\leq L)$ may consist of a single leaky integrate-to-threshold unit (LTU) node or more nodes. The node n_i equations are:

$$V_i = \sum_j w_{ij} k_j$$

$$n_i = \theta(Vi - Thx)$$

[0088] where, θ is a Heaviside step function; w_{ij} is a coupling node unit (CNU) between node i and image component j (for example, grayscale value of a certain pixel j); k_j is an image component 'j' (for example, grayscale value of a certain pixel j); Th_x is a constant Threshold value, where x is 'S' for Signature and 'RS' for Robust Signature; and V_i is a Coupling Node Value.

[0089] The Threshold values Th_X are set differently for Signature generation and for Robust Signature generation. For example, for a certain distribution of values (for the set of nodes), the thresholds for Signature (Th_S) and Robust Signature (Th_{RS}) are set apart, after optimization, according to at least one or more of the following criteria:

For: $V_i > Th_{RS}$

$$1-p(V>Th_S)-1-(1-\epsilon)^l<<1 \qquad 1:$$

[0090] i.e., given that l nodes (cores) constitute a Robust Signature of a certain image I, the probability that not all of these l nodes will belong to the Signature of a same, but noisy image, Ĩ is sufficiently low (according to a system's specified accuracy).

$$p(V_i>Th_{RS})\approx l/L$$

[0091] i.e., approximately l out of the total L nodes can be found to generate a Robust Signature according to the above definition.

[0092] 3: Both Robust Signature and Signature are generated for certain frame i.

[0093] It should be understood that the generation of a signature is unidirectional, and typically yields lossless compression, where the characteristics of the compressed data are maintained but the uncompressed data cannot be reconstructed. Therefore, a signature can be used for the purpose of comparison to another signature without the need of comparison to the original data. The detailed description of the Signature generation can be found in U.S. Pat. Nos. 8,326,775 and 8,312,031, assigned to the common assignee, which are hereby incorporated by reference.

[0094] A Computational Core generation is a process of definition, selection, and tuning of the parameters of the cores for a certain realization in a specific system and application. The process is based on several design considerations, such as:

[0095] (a) The Cores should be designed so as to obtain maximal independence, i.e., the projection from a signal space should generate a maximal pair-wise distance between any two cores' projections into a high-dimensional space.

[0096] (b) The Cores should be optimally designed for the type of signals, i.e., the Cores should be maximally sensitive to the spatio-temporal structure of the injected signal, for example, and in particular, sensitive to local correlations in time and space. Thus, in some cases a core represents a dynamic system, such as in state space, phase space, edge of chaos, etc., which is uniquely used herein to exploit their maximal computational power.

[0097] (c) The Cores should be optimally designed with regard to invariance to a set of signal distortions, of interest in relevant applications.

[0098] A detailed description of the Computational Core generation and the process for configuring such cores is discussed in more detail in the above-noted U.S. Pat. No. 8,655,801, the contents of which are hereby incorporated by reference.

[0099] FIG. **7** depicts an example flowchart **700** illustrating a method for providing recommendations to users based on contextual insights according to an embodiment. It should be noted that, in various embodiments, recommendations may be provided without first receiving multimedia content elements to analyze. In such embodiments, recommendations may be determined and provided in response to, e.g., a predetermined event, input from a user, and so on. As a non-limiting example, a user may request a recommendation for a movie or TV show to watch on a video streaming content website based on his or her interests.

[0100] At S**710**, at least one contextual insight indicating a preference of the user is identified. In an embodiment, the at least one contextual insight may be identified based on, but not limited to, a request for a recommendation, a user profile of the user, a multimedia content element provided by the user (via, e.g., a user device), a combination thereof, and the like. In another embodiment, the at least one contextual insight may be generated as described further herein above with respect to FIG. **4**.

[0101] At S**720**, a search for content items matching the identified contextual insights is performed. The matching content items may include, but are not limited to, multimedia content elements, web-pages featuring matching content, electronic documents featuring matching content, combinations thereof, and the like. In an embodiment, S**720** may include matching signatures representing the identified contextual insights to signatures of content items of one or more web sources. As an example, if a contextual insight is a preference for "police dramas," content items related to television and movie dramas prominently featuring police and detectives may be found during the search.

[0102] At S**730**, upon identification of at least one matching content item, the at least one matching content item is provided as a recommendation to the user device. Providing the matching content items as recommendations may include, but is not limited to, providing one or more links to each content item, providing identifying information about each content item, sending the content items to the user device, notifying the user of content items existing on the user device, combinations thereof, and so on. To this end, S**730** may include sending the recommended content items to the user device.

[0103] In an embodiment, providing the content items as a recommendation may further include causing execution or display of the recommended content items. To this end, the recommended content items to be executed or displayed may be selected from among the matching content items based on expected actions determined for the user. An example flowchart illustrating providing content items based on expected actions is described further herein below with respect to FIG. **8**.

[0104] At S**740**, it is checked whether additional contextual insights are identified and, if so, execution continues with S**720**; otherwise, execution terminates.

[0105] As a non-limiting example, in case the user is determined as currently viewing an image of a vehicle such as a Ford® Focus, and a user profile indicates that he is based in Manhattan, N.Y., a link to a financing institution that offers financing plans for purchasing vehicles may be found and provided as a recommendation to the user device.

[0106] FIG. **8** depicts an example flowchart **800** illustrating a method for providing content items based on expected actions of a user of a user device according to an embodiment. It should be noted that, in various embodiments, the content items may be provided without first receiving multimedia content elements to analyze. In such embodiments, the content items may be selected and provided in response to, e.g., a predetermined event, inputs from a user, and so on.

[0107] At S**810**, at least one contextual insight indicating an action expected to be performed by the user is identified. In an embodiment, the at least one contextual insight may be identified based on, but not limited to, a request for an action, a user profile of the user, a multimedia content element provided by the user (via, e.g., a user device), a combination thereof, and the like. In another embodiment, the at least one contextual insight may be generated as described further herein above with respect to FIG. **4**.

[0108] At S**820**, one or more expected actions that the user is likely to perform via the user device **120** are determined based on the identified contextual insights. The determination may be made based on previous data, similar cases, contextual analysis of one or more actions made by the user of the user device, and the like. As an example, if the contextual insights indicate a current interest in "ride sharing NYC" and the user has previously used a ride sharing service, it may be determined that the user is likely to download and open a ride sharing application.

[0109] At S**830**, one or more content items to be utilized to assist the user in performing the expected actions are selected from among content found based on contextual insights. To this end, S**830** may include searching based on the contextual insights as described herein above with respect to FIG. **7**. The searching may be in one or more web sources, one or more databases, in the user device, or a combination thereof. For example, an application to be executed may be found in the user device, or may be found in an application repository and downloaded to the user device. The content items may include, but are not limited to, multimedia content elements, web-pages featuring matching content, electronic documents featuring matching

content, communication requests, content requests, combinations thereof, and the like. In an embodiment, S830 may include matching signatures representing the identified contextual insights to signatures of content items.

[0110] The content items to be utilized are selected from among the found content items based on the expected actions. As non-limiting examples, contextually appropriate applications may be selected when the expected actions include opening an application on the user device, contextually appropriate videos may be selected when expected actions include viewing videos, contextually appropriate web pages may be selected when expected actions include opening a web browser, a messaging application stored in the user device may be selected when the expected actions include a communication request, and the like.

[0111] At S840, upon identification of at least one matching content item, the matching content items are provided to the user device 120. Providing the matching content items may include, but is not limited to, providing one or more links to each content item, providing identifying information about each content item, sending the content items to the user device 120, notifying the user of content items existing on the user device, causing launching of a link or a program associated with the content item, combinations thereof, and so on.

[0112] At S850, it is checked whether additional contextual insights are identified and, if so, execution continues with S820; otherwise, execution terminates.

[0113] The various embodiments disclosed herein can be implemented as hardware, firmware, software, or any combination thereof. Moreover, the software is preferably implemented as an application program tangibly embodied on a program storage unit or computer readable medium consisting of parts, or of certain devices and/or a combination of devices. The application program may be uploaded to, and executed by, a machine comprising any suitable architecture. Preferably, the machine is implemented on a computer platform having hardware such as one or more central processing units ("CPUs"), a memory, and input/output interfaces. The computer platform may also include an operating system and microinstruction code. The various processes and functions described herein may be either part of the microinstruction code or part of the application program, or any combination thereof, which may be executed by a CPU, whether or not such a computer or processor is explicitly shown. In addition, various other peripheral units may be connected to the computer platform such as an additional data storage unit and a printing unit. Furthermore, a non-transitory computer readable medium is any computer readable medium except for a transitory propagating signal.

[0114] All examples and conditional language recited herein are intended for pedagogical purposes to aid the reader in understanding the principles of the disclosure and the concepts contributed by the inventor to furthering the art, and are to be construed as being without limitation to such specifically recited examples and conditions. Moreover, all statements herein reciting principles, aspects, and embodiments, as well as specific examples thereof, are intended to encompass both structural and functional equivalents thereof. Additionally, it is intended that such equivalents include both currently known equivalents as well as equivalents developed in the future, i.e., any elements developed that perform the same function, regardless of structure.

[0115] It should be understood that any reference to an element herein using a designation such as "first," "second," and so forth does not generally limit the quantity or order of those elements. Rather, these designations are generally used herein as a convenient method of distinguishing between two or more elements or instances of an element. Thus, a reference to first and second elements does not mean that only two elements may be employed there or that the first element must precede the second element in some manner. Also, unless stated otherwise, a set of elements comprises one or more elements.

[0116] As used herein, the phrase "at least one of" followed by a listing of items means that any of the listed items can be utilized individually, or any combination of two or more of the listed items can be utilized. For example, if a system is described as including "at least one of A, B, and C," the system can include A alone; B alone; C alone; A and B in combination; B and C in combination; A and C in combination; or A, B, and C in combination.

What is claimed is:

1. A method for providing a content item based on a user interest and an expected action to be performed by a user device, comprising:

querying, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature;

generating at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference;

determining the expected action based on the at least one contextual insight;

determining, based on the expected action, the content item to be provided to the user device; and

providing the determined content item to the user device.

2. The method of claim 1, further comprising:

determining, based on the at least one signature generated for the multimedia content element, the concept of the multimedia content element, wherein the at least one contextual insight is generated based further on the concept of the multimedia content element.

3. The method of claim 2, wherein the user profile is queried based on the determined concept, wherein the user interest is determined further by mapping the determined concept to the user interest using an association table.

4. The method of claim 2, wherein the concept is determined by querying a concept-based database using the at least one signature.

5. The method of claim 1, wherein determining the content item to be provided to the user device further comprises:

generating at least one contextual insight signature for the at least one contextual insight; and

matching the at least one contextual insight signature to content item signatures associated with a plurality of content items to identify at least one matching content item; and

selecting the content item to be provided from among the at least one matching content item based on the at least one expected action.

6. The method of claim 1, wherein the generated at least one signature is robust to noise and distortions.

7. The method of claim 1, wherein the content item is a multimedia content element, wherein providing the content item to the user device includes causing a display of the multimedia content item on the user device.

8. The method of claim 1, wherein the content item is an application, wherein providing the content item to the user device includes causing a launch of the application on the user device.

9. The method of claim 1, wherein the concept is a collection of signatures representing at least one conceptually related multimedia content element and metadata describing the concept, wherein the collection of signatures is a signature reduced cluster generated by inter-matching signatures generated for the at least one multimedia content element.

10. The method of claim 1, wherein each signature is generated by a signature generator system, wherein the signature generator system includes a plurality of computational cores configured to receive a plurality of unstructured data elements, each computational core of the plurality of computational cores having properties that are at least partly statistically independent of other of the computational cores, wherein the properties of each core are set independently of each other core.

11. A non-transitory computer readable medium having stored thereon instructions for causing a processing system to perform a process for providing a content item based on a user interest and an expected action to be performed by a user device, the process comprising:

querying, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature;

generating at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference;

determining the expected action based on the at least one contextual insight;

determining, based on the expected action, the content item to be provided to the user device; and

providing the determined content item to the user device.

12. A system for providing a content item based on a user interest and an expected action to be performed by a user device, comprising:

a processing circuitry; and

a memory, wherein the memory contains instructions that, when executed by the processing circuitry, configure the system to:

query, based on at least one signature generated for a multimedia content element, a user profile to identify the user interest, wherein a concept of the identified user interest matches a concept represented by the generated at least one signature;

generate at least one contextual insight based on the user interest, wherein each contextual insight indicates a user preference;

determine the expected action based on the at least one contextual insight;

determine, based on the expected action, the content item to be provided to the user device; and

provide the determined content item to the user device.

13. The system of claim 12, wherein the system is further configured to:

determine, based on the at least one signature generated for the multimedia content element, the concept of the multimedia content element, wherein the at least one contextual insight is generated based further on the concept of the multimedia content element.

14. The system of claim 13, wherein the user profile is queried based on the determined concept, wherein the user interest is determined further by mapping the determined concept to the user interest using an association table.

15. The system of claim 13, wherein the concept is determined by querying a concept-based database using the at least one signature.

16. The system of claim 12, wherein the system is further configured to:

generate at least one contextual insight signature for the at least one contextual insight; and

match the at least one contextual insight signature to content item signatures associated with a plurality of content items to identify at least one matching content item; and

select the content item to be provided from among the at least one matching content item based on the at least one expected action.

17. The system of claim 12, wherein the generated at least one signature is robust to noise and distortions.

18. The system of claim 12, wherein the content item is a multimedia content element, wherein providing the content item to the user device includes causing a display of the multimedia content item on the user device.

19. The system of claim 12, wherein the content item is an application, wherein providing the content item to the user device includes causing a launch of the application on the user device.

20. The system of claim 12, wherein the concept is a collection of signatures representing at least one conceptually related multimedia content element and metadata describing the concept, wherein the collection of signatures is a signature reduced cluster generated by inter-matching signatures generated for the at least one multimedia content element.

21. The system of claim 12, wherein each signature is generated by a signature generator system, wherein the signature generator system includes a plurality of computational cores configured to receive a plurality of unstructured data elements, each computational core of the plurality of computational cores having properties that are at least partly statistically independent of other of the computational cores, wherein the properties of each core are set independently of each other core.

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